SAMSUNG 913T

Please read the following safety instructions as they are designed to prevent damage to property and harm to the user.

Notational

Warning / Caution

Failure to follow directions noted by this symbol could result in bodily harm or damage to equipment.

Notational Conventions

Prohibited	Important to read and understand at all times
Do not disassemble	Disconnect the plug from the outlet
Do not touch	Grounding to prevent an electric shock

Power

When not used for extended period of time, set your computer to DPMS.
If using a screen saver, set it to the active screen mode.

Shortcut to Anti-Afterimage Instructions

Do not use a damaged or loose plug.

- This may cause an electric shock or fire.

Do not pull the plug out by the wire nor touch the plug with wet hands.

- This may cause an electric shock or fire.

Use only a properly grounded plug and receptacle.

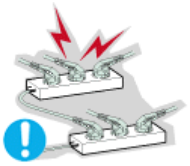
- An improper ground may cause electric shock or equipment damage.

Insert the power plug firmly so that it does not come loose.

- A bad connection may cause fire.

Do not excessively bend the plug and wire nor place heavy objects upon them, which could cause damage.

- This may cause an electric shock or fire.



Do not connect too many extension cords or plugs to an outlet.

- This may cause fire.

Installation

Be sure to contact an authorized Service Center when installing your set in a location with heavy dust, high or low temperatures, high humidity, and chemical substances, or where it will be operated for 24 hours continuously such as an airport, train station or etc.

Failure to do so may cause serious damage to your set.

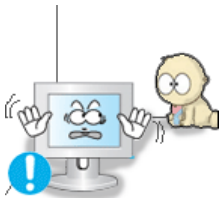
Put your monitor in a location with low humidity and a minimum of dust.

- Failure to do so may cause an electric shock or fire inside the monitor.

- **Do not drop the monitor when moving it.**
  - This may cause damage to the product or human body.

- **Install the monitor base in a showcase or shelf so that the end of the base does not project beyond the showcase or shelf.**
  - Dropping the product may cause damage to the product or personal injury.

- **Do not place the product on an unstable or small surface area.**
  - Place the product on an even, stable surface, as the product may fall and cause harm to someone walking by, specifically children.



- **Do not place the product on the floor.**
  - Someone, specifically children could trip over it.

- **Keep any flammable objects such as candles, insecticides or cigarettes away from the product.**
  - Otherwise, this may cause a fire.

- **Keep any heating devices away from the power cable.**
  - A melted coating may lead to electric shock or fire.

- **Do not install the product in places with poor ventilation, for instance, a bookshelf, closet, etc.**
  - Any increase in internal temperature may cause fire.

- **Set down the monitor carefully.**
  - The monitor could be damaged or broken.

Do not place the monitor face down.

- The TFT-LCD surface may be damaged.

Installing a wall bracket must be done by a qualified professional.

- Installation by unqualified personnel may result in injury.
- Always use the mounting device specified in the owner's manual.

When installing the product, make sure to keep it away from the wall (more than 10cm/4inch) for ventilation purposes.

- Poor ventilation may cause an increase in the internal temperature of the product, resulting in a shortened component life and degraded performance.

Clean

When cleaning the monitor case or the surface of the TFT-LCD screen, wipe with a slightly moistened, soft fabric.

Do not spray water or detergent directly on the monitor.

- This may cause damage, electric shock or fire.

Use the recommended detergent with a smooth cloth.

If the connector between the plug and the pin is dusty or dirty, clean it properly with a dry cloth.

- A dirty connector may cause an electric shock or fire.

Make sure to unplug the power cord before cleaning the product.

- Otherwise, this may cause electric shock or fire.

Unplug the power cord from the power outlet and wipe the product using a soft, dry cloth.

- Do not use any chemicals such as wax, benzene, alcohol, thinners, insecticide, air freshener, lubricant or detergent.

Contact the Service Center or Customer Center for interior cleaning once a year.

- Keep the product's interior clean. Dust which has accumulated in the interior over an extended period of time may cause malfunction or fire.

Others

Do not remove cover (or back).

- This may cause an electric shock or fire.
- Refer servicing to qualified service personnel.

If your monitor does not operate normally - in particular, if there are any unusual sounds or smells coming from it - unplug it immediately and contact an authorized dealer or service.

- This may cause an electric shock or fire.

Keep the product away from places exposed to oil, smoke or moisture; do not install inside a vehicle.

- This may cause malfunction, an electric shock or fire.
- Especially avoid operating the monitor near water or outdoors where the monitor could be exposed to snow or rain.

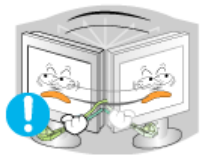
If the monitor is dropped or the casing is damaged, turn the monitor off and unplug the power cord. Then contact the Service Center.

- The monitor may malfunction, causing an electric shock or fire.

Disconnect the plug from the outlet during storms or lightening or if it is not used for a long period of time.

- Failure to do so may cause an electric shock or fire.

- **Do not try to move the monitor by pulling only the wire or the signal cable.**
  - This may cause a breakdown, electric shock or fire due to damage to the cable.



- **Do not move the monitor right or left by pulling only the wire or the signal cable.**
  - This may cause a breakdown, electric shock or fire due to damage to the cable.

- **Do not cover the vents on the monitor cabinet.**
  - Bad ventilation may cause a breakdown or fire.

- **Do not place water containers, chemical products or small metal objects on the monitor.**
  - This may cause malfunction, an electric shock or fire.
  - If a foreign substance enters the monitor, unplug the power cord and contact the Service Center .

- **Keep the product away from combustible chemical sprays or inflammable substances.**
  - This may cause an explosion or fire.

- **Never insert anything metallic into the monitor openings.**
  - This may cause an electric shock, fire or injury.

- **Do not insert metal objects such as chopsticks, wire and gimlet or inflammable objects such as paper and match into the vent, headphone port or AV ports.**
  - It may cause a fire or an electric shock. If an alien substances or water flows into the product, turn the product off, unplug the power connector from the wall outlet and contact Service Center.

- **If you view a fixed screen for an extended period of time, residual image or blurriness may appear.**
  - Change the mode to energy save or set a screensaver to moving picture when you need to be away from the monitor for an extended period of time.

- **Adjust the resolution and frequency to the levels appropriate for the model.**
  - Inappropriate resolution may cause undesirable picture quality.

    19 inch - 1280 X 1024

- **Watching the monitor continuously at a too close angle may result in eyesight damage.**

- **To ease eye strain, take at least a five-minute break after every hour of using the monitor**.

- **Do not install the product on an unstable, uneven surface or a location prone to vibrations.**
  - Dropping the product may cause damage to the product or personal injury. Using the product in a location prone to vibrations may shorten the lifetime of the product or may catch fire.

- **When moving the monitor, turn off and unplug the power cord. Make sure that all cables, including the antenna cable and cables connected to other devices, are disconnected before moving the monitor.**
  - Failure to disconnect a cable may damage it and lead to fire or an electric shock.

- **Place the product out of children's reach, as they could damage it by hanging onto it.**
  - A falling product could cause physical damage even death.

- **When not using the product for an extended time period, keep the product unplugged**
  - Otherwise, this may cause heat emission from the accumulated dirt or degraded insulation, leading to electric shock or fire.

- **Do not place children's favorite objects (or anything else that may be tempting) on the product.**
  - Children may try to climb on the product to retrieve an object. The product could fall, causing physical damage or even death.

Please make sure the following items are included with your monitor.
If any items are missing, contact your dealer.
Contact a local dealer to buy optional items.

Unpacking

Option 1

Monitor & Simple stand

Bottom

Option 2

Monitor & Pivot stand

Manual

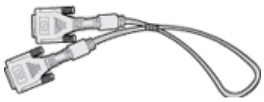
Quick Setup Guide	Warranty Card (Not available in all locations)	User's Guide, Monitor Driver, Natural Color software, MagicTune™ software, MagicRotation software

- **Cable**

D-Sub Cable

Power Cord

- **Sold separately**



DVI Cable

- **Front**

1.	**Menu button [☰]**	Opens the OSD menu. Also use to exit the OSD menu or return to the previous menu.
2.	**MagicBright button [◭]**	MagicBright is a new feature providing optimum viewing environment depending on the contents of the image you are watching. Currently four different modes are available: Custom, Text, Internet, and Entertain. Each mode has its own pre-configured brightness value. You can easily select one of four

		settings by simply pressing MagicBright control buttons. **1) Custom** Although the values are carefully chosen by our engineers, the pre-configured values may not be comfortable to your eyes depending on your taste. If this is the case, adjust the brightness and contrast by using the OSD menu. **2) Text** : Normal brightness For documentations or works involving heavy text. **3) Internet** : Medium brightness For working with a mixture of images such as text and graphics. **4) Entertain** : High brightness For watching motion pictures such as a DVD or VCD. >>Click here to see an animation clip
3.	**Brightness button [☼]**	When OSD is not on the screen, push the button to adjust brightness.
2,3.	**Adjust buttons [▼/▲]**	Adjust items in the menu.
4.	**Enter button [⏎] / Source button**	Activates a highlighted menu item. / Push the 'Source', then selects the video signal while the OSD is off. (When the source button is pressed to change the input mode, a message appears in the center of the screen displaying the current mode -- analog or digital input signal.) Note : If you select the digital mode, you must connect your monitor to the graphic card's port using the DVI cable.
5.	**Auto button**	Use this button for auto adjustment.
6.	**Power button**	Use this button for turn the monitor on and off.
7.	**Power indicator**	This light glows green during normal operation, and blinks green once as the monitor saves your adjustments.

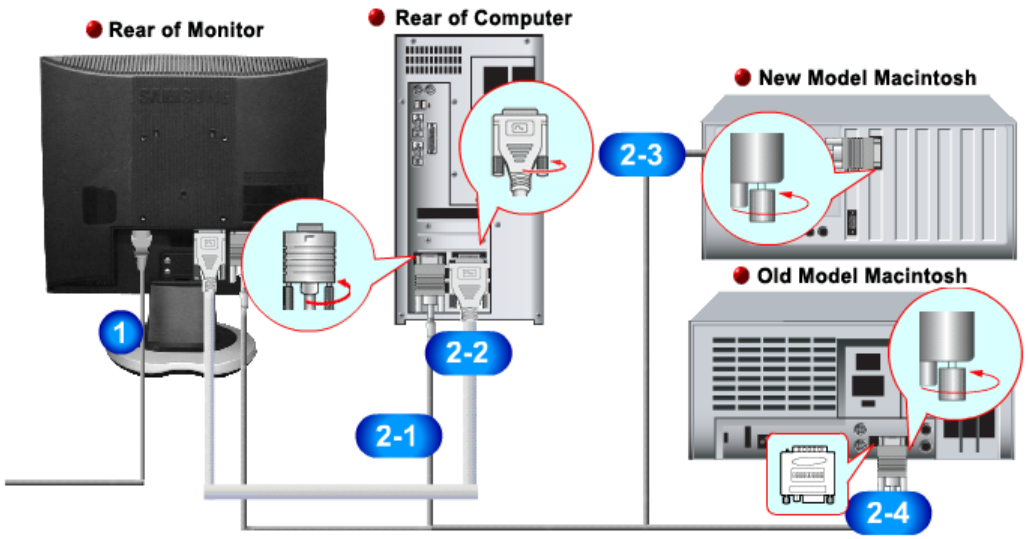
See PowerSaver described in the manual for further information regarding power saving functions. For energy conservation, turn your monitor off when it is not needed, or when leaving it unattended for long periods.

Rear

(The configuration at the back of the monitor may vary from product to product.)

1.	**Power port**	Connect the power cord for your monitor to the power port on the back of the monitor.
2.	**DVI port**	Connect the DVI cable to the DVI port on the back of your Monitor.
3.	**D-sub 15-pin port**	Connect the D-sub cable to the 15-pin, D-sub connector on the back of your monitor.
4.	**Kensington Lock**	The Kensington lock is a device used to physically fix the system when using it in a public place. (The locking device has to be purchased separately.)

See Connecting the Monitor for further information regarding cable connections.



1. Connect the power cord for your monitor to the power port on the back of the monitor.
Plug the power cord for the monitor into a nearby outlet.

2-1. Using the D-sub (Analog) connector on the video card.
Connect the D-sub cable to the 15-pin, D-sub connector on the back of your monitor.

2-2. Using the DVI (Digital) connector on the video card.
Connect the DVI cable to the DVI port on the back of your monitor.

2-3. Connected to a Macintosh.
Connect the monitor to the Macintosh computer using the D-SUB connection cable.

2-4. In the case of an old model Macintosh, you need to connect the monitor using a special Mac adapter.

3. Turn on your computer and monitor. If your monitor displays an image, installation is complete.

- **Monitor Assembly**

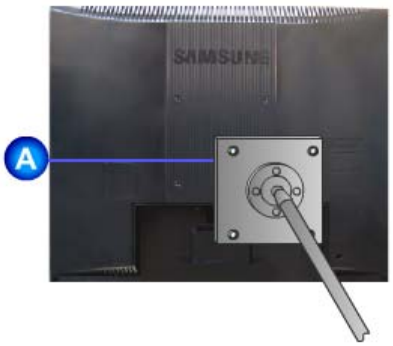
Monitor and Bottom

- **Pivot Stand**

A. Stand Stopper

- **Attaching a Base**

This monitor accepts a 100 mm x 100 mm VESA-compliant mounting interface pad.



Simple stand

Pivot stand

A. Monitor

B. Mounting interface pad

1. Turn off your monitor and unplug its power cord.
2. Lay the LCD monitor face-down on a flat surface with a cushion beneath it to protect the screen.
3. Remove four screws and then remove the stand from the LCD monitor.
4. Align the mounting interface pad with the holes in the rear cover mounting pad and secure it with four screws that came with the arm-type base, wall mount hanger or other base.

Installing the Monitor Driver (Automatic)

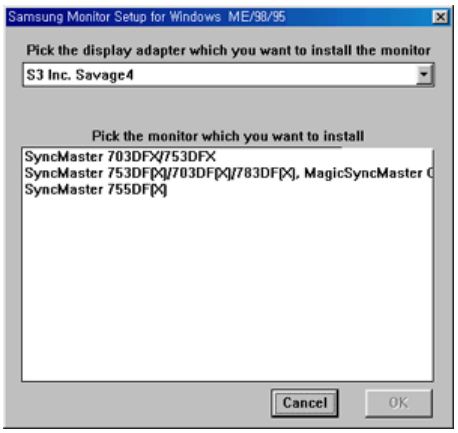
When prompted by the operating system for the monitor driver, insert the CD-ROM included with this monitor. Driver installation is slightly different from one operating system to another. Follow the directions appropriate for the operating system you have.

Prepare a blank disk and download the driver program file at the Internet web site shown here.

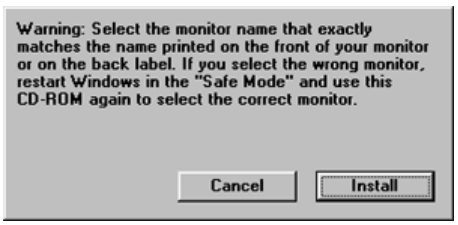
- Internet web site : http://www.samsung.com/ (Worldwide)
  http://www.samsung.com/monitor (U.S.A)
  http://www.sec.co.kr/monitor (Korea)
  http://www.samsungmonitor.com.cn/ (China)

Windows ME

1. Insert CD into the CD-ROM drive.
2. Click **"Windows ME Driver"**.
3. Choose your monitor model in the model list, then click the **"OK"** button.


Samsung Monitor Setup for Windows ME/98/95
Pick the display adapter which you want to install the monitor
S3 Inc. Savage4
Pick the monitor which you want to install
SyncMaster 703DFX/753DFX
SyncMaster 753DF[X]/703DF[X]/783DF[X], MagicSyncMaster C
SyncMaster 755DF[X]
Cancel
OK

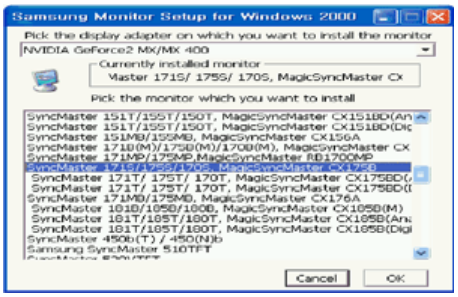
4. Click the **"Install"** button in the **"Warning"** window.


Warning: Select the monitor name that exactly matches the name printed on the front of your monitor or on the back label. If you select the wrong monitor, restart Windows in the "Safe Mode" and use this CD-ROM again to select the correct monitor.
Cancel
Install

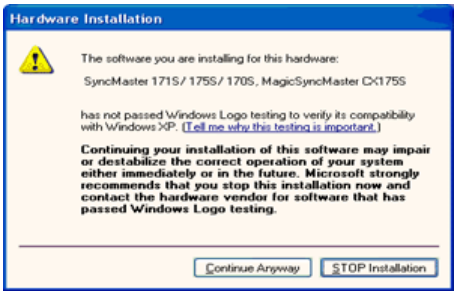
5. Monitor driver installation is completed.

Windows XP/2000

1. Insert CD into the CD-ROM drive.
2. Click **"Windows XP/2000 Driver"**
3. Choose your monitor model in the model list, then click the **"OK"** button.


Samsung Monitor Setup for Windows 2000
Pick the display adapter on which you want to install the monitor
NVIDIA GeForce2 MX/MX 400
Currently installed monitor
Master 171S/ 175S/ 170S, MagicSyncMaster Cx
Pick the monitor which you want to install
Cancel
OK

4. If you can see following message window, then click the **"Continue Anyway"** button. Then click **"OK"** button.


Hardware Installation
The software you are installing for this hardware:
SyncMaster 171S/ 175S/ 170S, MagicSyncMaster CX175S
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

This monitor driver is under certifying MS logo,and this installation don't damage your system.The certified driver will be posted on Samsung Monitor Homepage
http://www.samsung.com/.

5. Monitor driver installation is completed.

Installing the Monitor Driver (Manual)

Windows XP | Windows 2000 |Windows Me |Windows NT | Linux

When prompted by the operating system for the monitor driver, insert the CD-ROM included with this monitor. Driver installation is slightly different from one operating system to another. Follow the directions appropriate for the operating system you have.

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- Internet web site : http://www.samsung.com/ (Worldwide)
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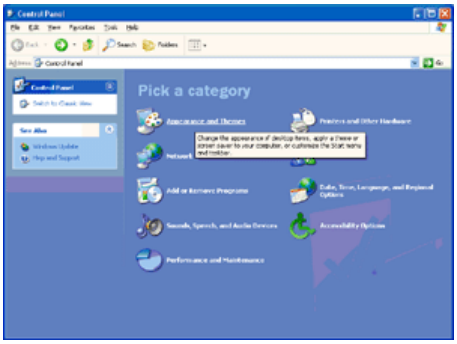
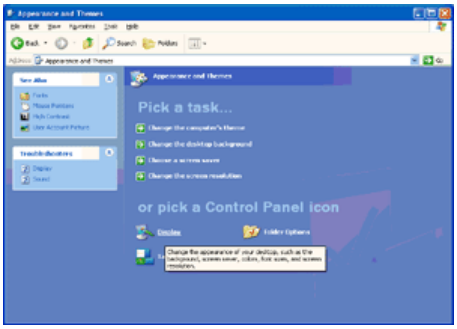
  http://www.sec.co.kr/monitor (Korea)
  http://www.samsungmonitor.com.cn/ (China)

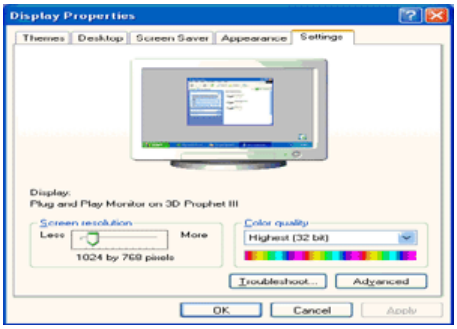
Microsoft® Windows® XP Operating System

1. Insert CD into the CD-ROM driver.
2. Click "**Start**" —> "**Control Panel**" then click the "**Appearance and Themes**" icon.

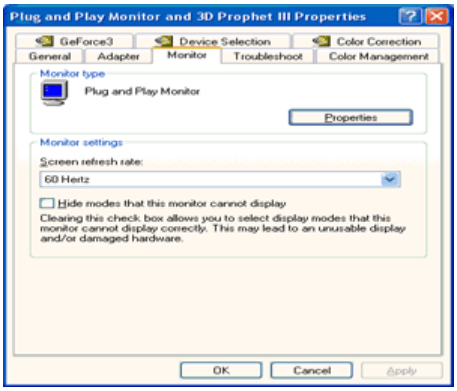


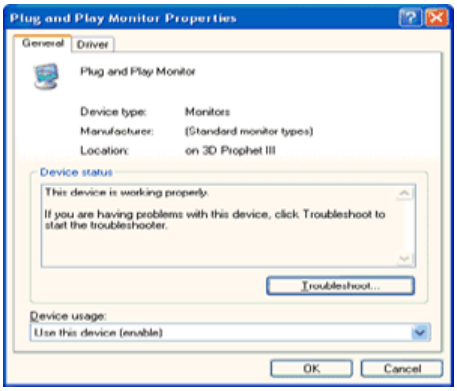
3. Click "**Display**" icon and choose the "**Settings**" tab then click "**Advanced..**".



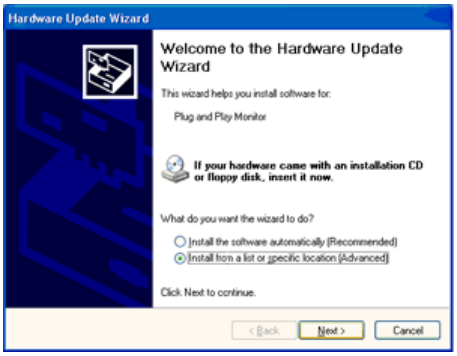


4. Click the "**Properties**" button on the "**Monitor**" tab and select "**Driver**" tab.

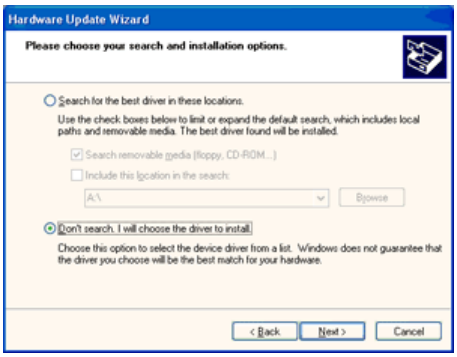


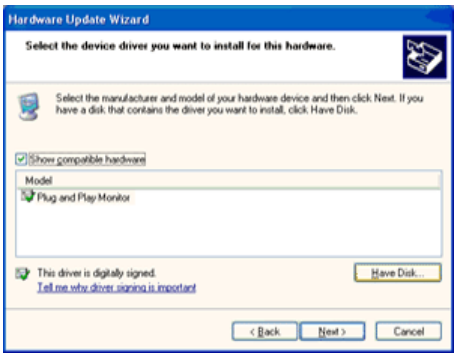


5. Click "**Update Driver..**" and select "**Install from a list or..**" then click "**Next**" button.

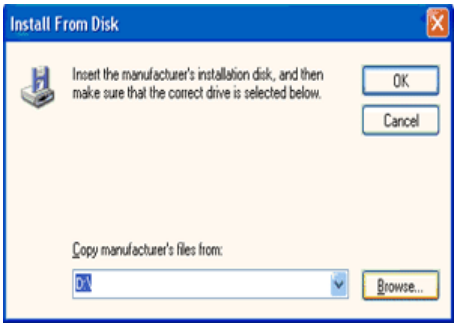

Hardware Update Wizard
Welcome to the Hardware Update Wizard
This wizard helps you install software for:
Plug and Play Monitor
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

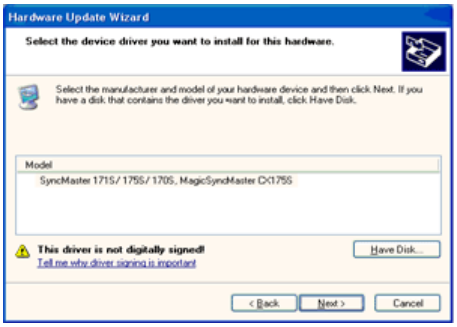
6. Select "**Don't search ,I will..**" then click "**Next**" and then click "**Have disk**".


Hardware Update Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
A:\
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

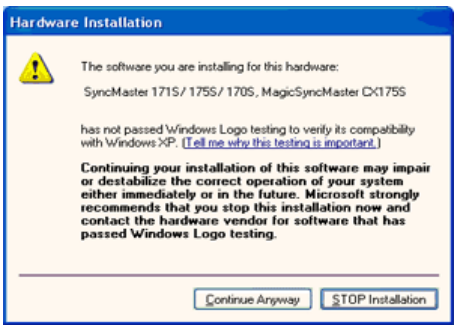

Hardware Update Wizard
Select the device driver you want to install for this hardware.
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.
Show compatible hardware
Model
Plug and Play Monitor
This driver is digitally signed.
Tell me why driver signing is important
Have Disk...
< Back
Next >
Cancel

7. Click the "**Browse**" button then choose A:(D:\Driver) and choose your monitor model in the model list and click the "**Next**" button.




Hardware Update Wizard
Select the device driver you want to install for this hardware.
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.
Model
SyncMaster 171S/ 175S/ 170S, MagicSyncMaster CX175S
This driver is not digitally signed!
Tell me why driver signing is important
Have Disk...
< Back
Next >
Cancel

8. If you can see following "**Message**" window, then click the "**Continue Anyway**" button. Then click "**OK**" button.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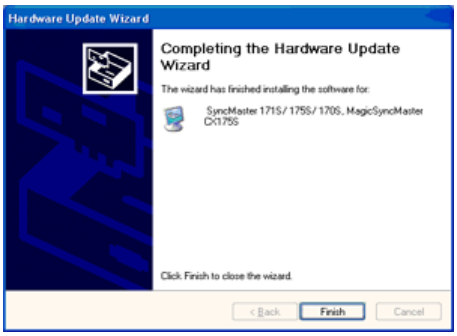
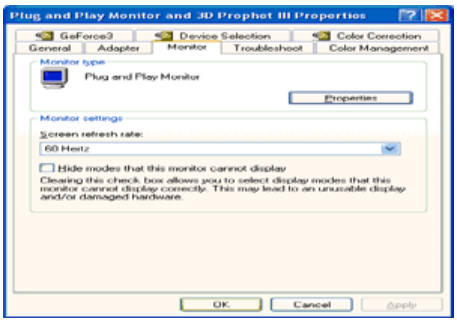
Continue Anyway
STOP Installation

This monitor driver is under certified MS logo,and this installation doesn't damage your system.The certified driver will be posted on Samsung Monitor homepage.
http://www.samsung.com/

9. Click the "**Close**" button then click "**OK**" button continually.


Hardware Update Wizard
Completing the Hardware Update Wizard
The wizard has finished installing the software for:
SyncMaster 171S/ 175S/ 170S, MagicSyncMaster CX175S
Click Finish to close the wizard.
< Back
Finish
Cancel

SyncMaster 171S/ 175S/ 170S, MagicSyncMaster CX...
General
Driver
SyncMaster 171S/ 175S/ 170S, MagicSyncMaster CX175S
Driver Provider: Samsung
Driver Date: 9/11/2001
Driver Version: 1.0.0.0
Digital Signer: Not digitally signed
Driver Details...
To view details about the driver files.
Update Driver...
To update the driver for this device.
Roll Back Driver
If the device fails after updating the driver, roll back to the previously installed driver.
Uninstall
To uninstall the driver (Advanced).
Close
Cancel



10. Monitor driver installation is completed.

Microsoft® Windows® 2000 Operating System

When you can see "Digital Signature Not Found" on your monitor, follow these steps.

1. Choose "**OK**" button on the "**Insert disk**" window.
2. Click the "**Browse**" button on the "**File Needed**" window.
3. Choose A:(D:\Driver) then click the "Open" button and then click "**OK**" button.

How to install

1. Click "**Start**" , "**Setting**" , "**Control Panel**".
2. Double click the "**Display**" Icon.
3. Choose the "**Settings**" tab and then click "**Advanced..**".
4. Choose "**Monitor**".
   Case1: If the "Properties" button is inactive, it means your monitor is properly configured. Please stop installation
   Case2: If the "Properties" button is active, click the "Properties" button then follow next steps continually.
5. Click "**Driver**" and then click on "**Update Driver..**" then click on the "Next" button.
6. Choose "**Display a list of the known drivers for this device so that I can choose a specific driver**" then click "**Next**" and then click "**Have disk**".
7. Click the "**Browse**" button then choose A:(D:\Driver).
8. Click the "**Open**" button, then click "**OK**" button.
9. Choose your monitor model and click the "**Next**" button then click "**Next**" button.
10. Click the "**Finish**" button then the "**Close**" button.

    If you can see the "**Digital Signature Not Found**" window then click the "**Yes**"button.
    And click the "**Finish**" button then the "**Close**" button.

Microsoft® Windows® Millennium Operating System

1. Click "**Start**" , "**Setting**" , "**Control Panel**".
2. Double click "**Display**" icon.
3. Select the "**Settings**" tab and click "**Advanced Properties**" button.
4. Select the "**Monitor**" tab.
5. Click the "**Change**" button in the "**Monitor Type**" area.
6. Choose "**Specify the location of the driver**".
7. Choose "**Display a list of all the driver in a specific location..**" then click "**Next**" button.
8. Click the "**Have Disk**" button
9. Specify A:\(D:\driver) then click "**OK**" button.
10. Select "**Show all devices**" and choose the monitor that corresponds to the one you connected to your computer and click "**OK**".
11. Continue choosing "**Close**" button and "**OK**" button until you close the Display Properties dialogue box.

Microsoft® Windows® NT Operating System

1. Click **Start**, **Settings**, **Control Panel**, and then double-click **Display** icon.
2. In Display Registration Information window, click Settings Tab and then click **All Display Modes**.
3. Select a mode that you wish to use (Resolution, Number of colors and Vertical frequency) and then click **OK**.
4. Click **Apply** button if you see the screen working normally after clicking **Test**. If the screen is not normal, change to a different mode (lower mode of resolution, colors or frequency).

If there is no Mode at **All Display Modes**, select the level of resolution and vertical frequency by referring to the Preset Timing Modes in the user guide.

Linux Operating System

To execute X-Window, you need to make the X86Config file, which is a type of system setting file.

1. Press Enter at the first and the second screen after executing the X86Config file.
2. The third screen is for **setting your mouse**.
3. Set a mouse for your computer.
4. The next screen is for **selecting a keyboard**.
5. Set a keyboard for your computer.
6. The next screen is for **setting your monitor**.
7. First of all, set a **horizontal frequency** for your monitor. (You can enter the frequency directly.)
8. Set a **vertical frequency** for your monitor. (You can enter the frequency directly.)
9. Enter the **model name of your monitor**. This information will not affect the actual execution of X-Window.
10. You have **finished** setting up your monitor.
    Execute X-Window after setting other requested hardware.

Natural Color

Natural Color Software Program

One of the recent problems in using a computer is that the color of the images printed out by a printer or other images scanned by a scanner or a digital camera are not the same as those shown on the monitor.
The Natural Color S/W is the very solution for this problem. It is a color administration system developed by Samsung Electronics in association with Korea Electronics & Telecommunications Research Institute (ETRI).
This system is available only for Samsung monitors and makes the color of the images on the monitor the same as the printed or scanned images.

For more information, refer to Help (F1) in the software program.

How to install the Natural Color software
Insert the CD included with the Samsung monitor into the CD-ROM Drive. Then, the initial screen of the program Natural Color will be executed. Click Natural Color on the initial screen to install the Natural Color software.
To install the program manually, insert the CD included with the Samsung monitor into the CD-ROM Drive, click the [Start] button of Windows and then select [Execute].
Enter D:\color\eng\setup.exe and then press the <Enter> key.
(If the drive where the CD is inserted is not D:\, enter the applicable drive.)

How to delete the Natural Color software program
Select **"Setting/Control Panel"** on the **"Start"** menu and then double-click **"Add/Delete a program"**.
Select Natural Color from the list and then click the **"Add/Delete"** button.

1. Use this button for open the on-screen menu and exits from the menu screen or closes screen adjustment menu.
2. This buttons allows you to adjust items in the menu.
3. This buttons allows you to adjust items in the menu.
4. Press this button activates a highlighted menu item.
5. Press to self-adjust to the incoming PC signal. The values of fine,coarse and position are adjusted automatically.

AUTO

Menu	Description
	When the '**AUTO**' button is pressed, the auto adjustment screen appears as shown in the animated screen on the center. Auto adjustment allows the monitor to self-adjust to the incoming video signal. The values of fine, coarse and position are adjusted automatically. (Available in analog mode only)
AUTO	To make the automatic adjustment function sharper, execute the 'AUTO' function while the AUTO PATTERN is on. • If auto adjustment does not work properly, press auto button again to adjust picture with more accuracy. • If you change resolution in the control panel, auto function will be executed automatically.

MagicBright™

Menu	Description
MagicBright™	Then push the MagicBright button again to circle through available preconfigured modes.

- four different modes(Custom/Text/Internet/Entertain)

Brightness

Menu	Description
Brightness	When OSD is not on the screen, push the button to adjust brightness.

Source

Menu	Description
Source	Selects the video signal while the OSD is off.

2. Color	Color Tone	Color Control	Gamma		
3. Image	Coarse	Fine	Sharpness	H-Position	V-Position
4. OSD	Language	H-Position	V-Position	Transparency	Display Time
5. Setup	Auto Source	Image Reset	Color Reset		
6. Information					

Picture

Menu	Description	Play/Stop
Brightness	You can use the on-screen menus to change the brightness according to personal preference. **Direct Access Feature** : When OSD is not on the screen, Push the button to adjust brightness.	
Contrast	You can use the on-screen menus to change the contrast according to personal preference.	

UP

Color

Menu	Description	Play/Stop
Color Tone	The tone of the color can be changed and one of four modes can be selected - Cool, Normal, Warm and Custom.	
Color Control	Adjusts individual R,G,B color balance.	
Gamma	Select one of three pre-defined gammas.	

UP

Image

Menu	Description	Play/Stop
Coarse	Removes noise such as vertical stripes. Coarse adjustment may move the screen image area. You may relocate it to the center using the horizontal control menu. (Available in analog mode only)	

Fine	Removes noise such as horizontal stripes. If the noise persists even after fine tuning, repeat it after adjusting the frequency (clock speed). (Available in analog mode only)	
Sharpness	Changes the clearance of image.	
H-Position	Changes the horizontal position of the monitor's entire display. (Available in analog mode only)	
V-Position	Changes the vertical position of the monitor's entire display. (Available in analog mode only)	

UP

OSD

Menu	Description	Play/Stop
Language	hange the language used in the menu. You can choose one of seven languages. • English, Français, Español, Deutsch, Italiano, Русский, Svenska **Note**:The language chosen affects only the language of the OSD. It has no effect on any software running on the computer.	
H-Position	You can change the horizontal position where the OSD menu appears on your monitor.	
V-Position	You can change the vertical position where the OSD menu appears on your monitor.	
Transparency	Change the transparency of the background of the OSD.	
Display Time	The menu will be automatically turned if no adjustments are made for a certain time period. You can set the amount of time the menu will wait before it is turned off.	

Setup

Menu	Description	Play/Stop
Auto Source	Select **Auto Source** for the monitor to automatically select the signal source.	
Image Reset	Image parameters are replaced with the factory default values.	
Color Reset	Color parameters are replaced with the factory default values.	

Information

Menu	Description
Information	Shows a video source, display mode on the OSD screen.

Overview

What is MagicTune™?

Monitor performance can vary due to the graphics card, host computer lighting conditions and other environmental factors. In order to get the best image on a monitor requires you to adjust it for your unique setting. Unfortunately, the manual controls available to tune the image often prove to be challenging. Proper adjustment (tuning) requires an easy to use program that goes through a step-by-step process to obtain the best overall picture quality.

In most cases even simple adjustments to Brightness, or Contrast require navigation of the multi-level, on-screen display (OSD) menus that are not easy to understand. Furthermore, there is no feedback to assist in correctly setting the controls of the monitor. MagicTune is a software utility that guides you through the tuning process with easy to understand instructions and back ground patterns designed for each monitor control. The display settings for each user can be saved, providing an easy way to select display characteristics in a multi-user environment, or having a single user have multiple defined presets based on content and ambient lighting.

Basic Functionality

MagicTune is a software utility that allows monitor adjustment and color tuning using the Display Data Channel Command Interface (DDC/CI) protocol. All adjustments to the display are controlled via software to eliminate the need to use the monitor on-screen display (OSD).
MagicTune supports Windows 98SE, Me, 2000, XP Home, and XP Professional.

MagicTune allows for quick accurate tuning of the display with the ability to easily save and use monitor configurations that are best suited for you.

OSD Mode

The OSD mode allows easy adjustment of monitor settings without taking pre-defined steps. You can access the desired menu item to set with ease.

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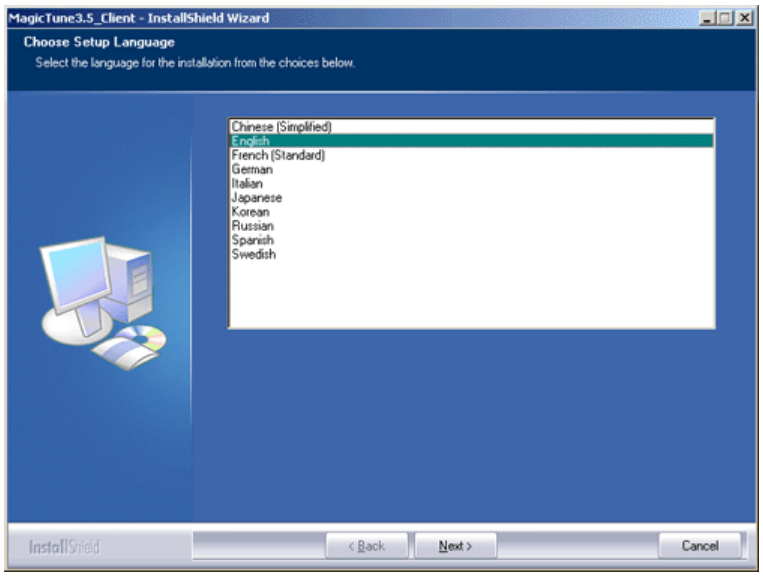
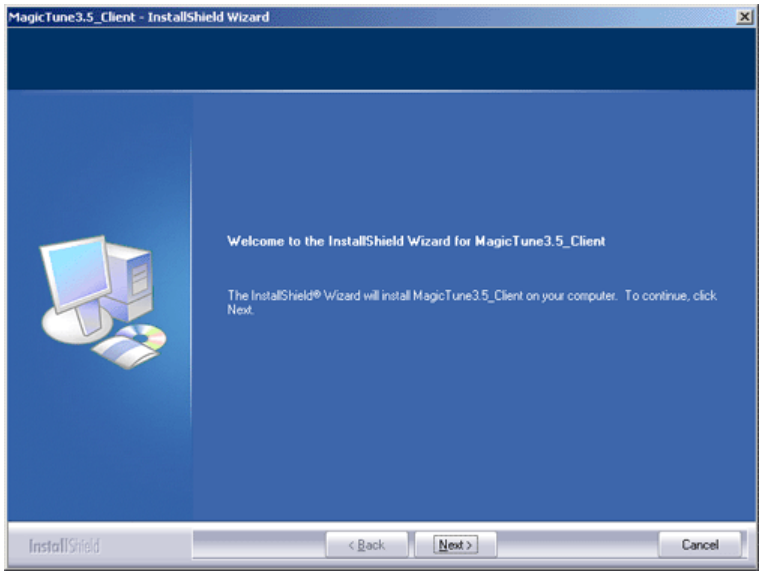
Installation

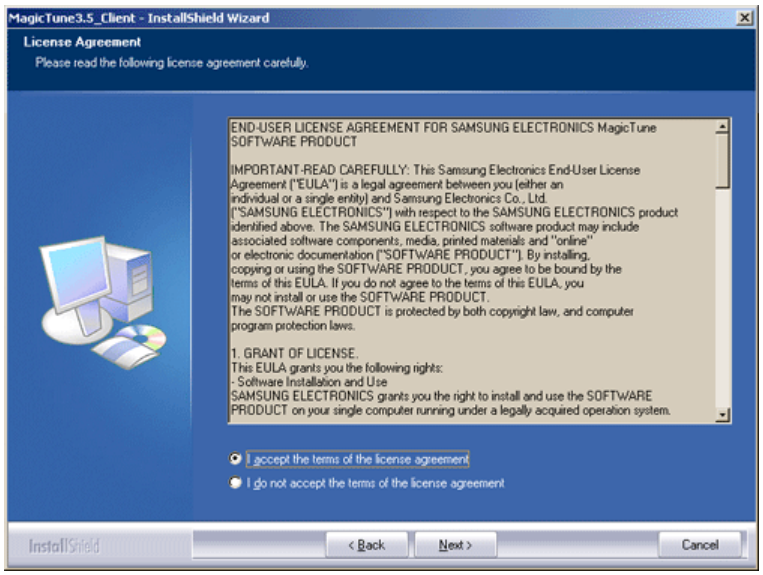
1. Insert the installation CD into the CD-ROM drive.
2. Click the MagicTune™ installation file.
3. Select installation Language, Click "Next".



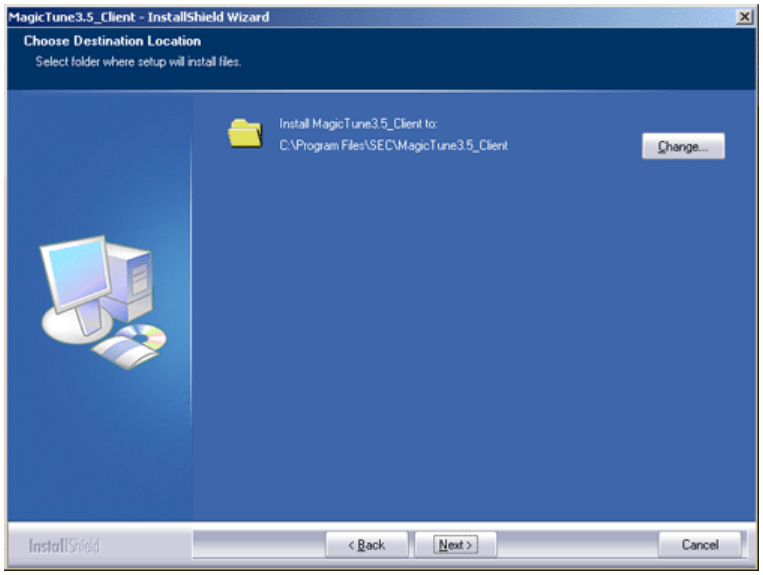
4. When the InstallationShield Wizard window appears, click "Next."


MagicTune3.5_Client - InstallShield Wizard
Welcome to the InstallShield Wizard for MagicTune3.5_Client
The InstallShield® Wizard will install MagicTune3.5_Client on your computer. To continue, click Next.
InstallShield
< Back
Next >
Cancel

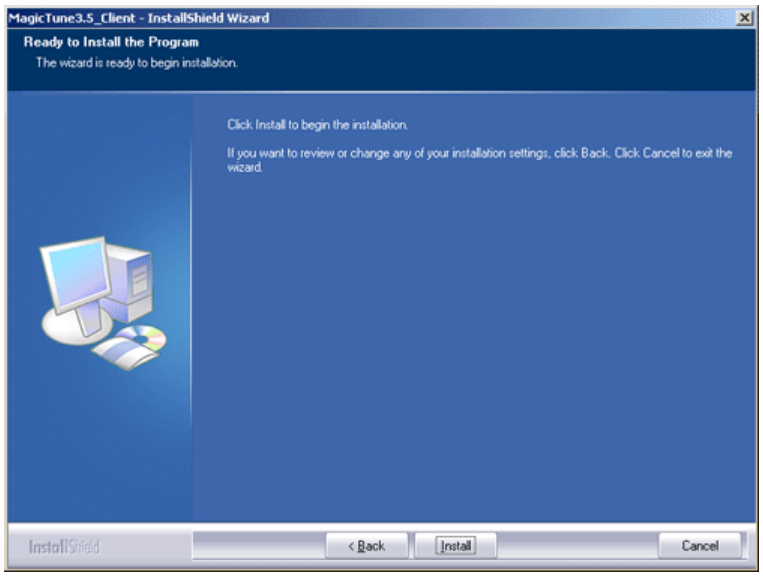
5. Select "I agree to the terms of the license agreement" to accept the terms of use.


MagicTune3.5_Client - InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
END-USER LICENSE AGREEMENT FOR SAMSUNG ELECTRONICS MagicTune SOFTWARE PRODUCT
IMPORTANT-READ CAREFULLY: This Samsung Electronics End-User License Agreement ("EULA") is a legal agreement between you (either an individual or a single entity) and Samsung Electronics Co., Ltd. ("SAMSUNG ELECTRONICS") with respect to the SAMSUNG ELECTRONICS product identified above. The SAMSUNG ELECTRONICS software product may include associated software components, media, printed materials and "online" or electronic documentation ("SOFTWARE PRODUCT"). By installing, copying or using the SOFTWARE PRODUCT, you agree to be bound by the terms of this EULA. If you do not agree to the terms of this EULA, you may not install or use the SOFTWARE PRODUCT.
The SOFTWARE PRODUCT is protected by both copyright law, and computer program protection laws.
1. GRANT OF LICENSE.
This EULA grants you the following rights:
- Software Installation and Use
SAMSUNG ELECTRONICS grants you the right to install and use the SOFTWARE PRODUCT on your single computer running under a legally acquired operation system.
I accept the terms of the license agreement
I do not accept the terms of the license agreement
InstallShield
< Back
Next >
Cancel

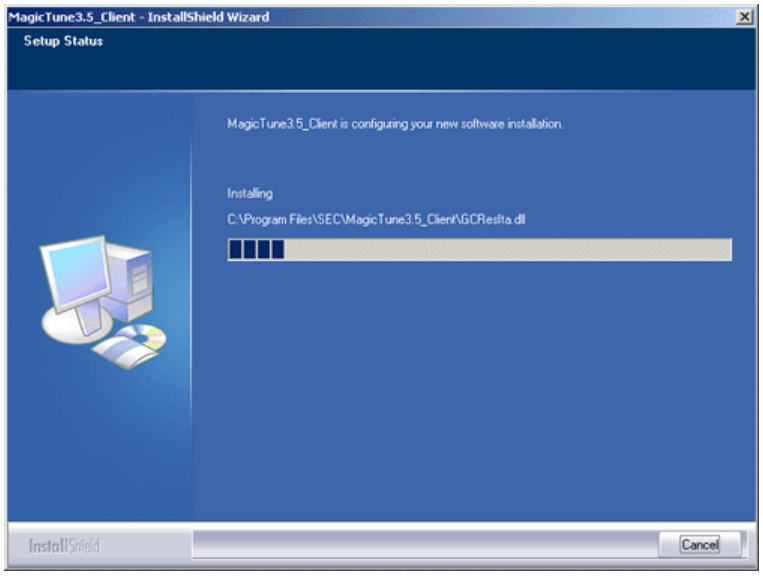
6. Choose a folder to install the MagicTune program.



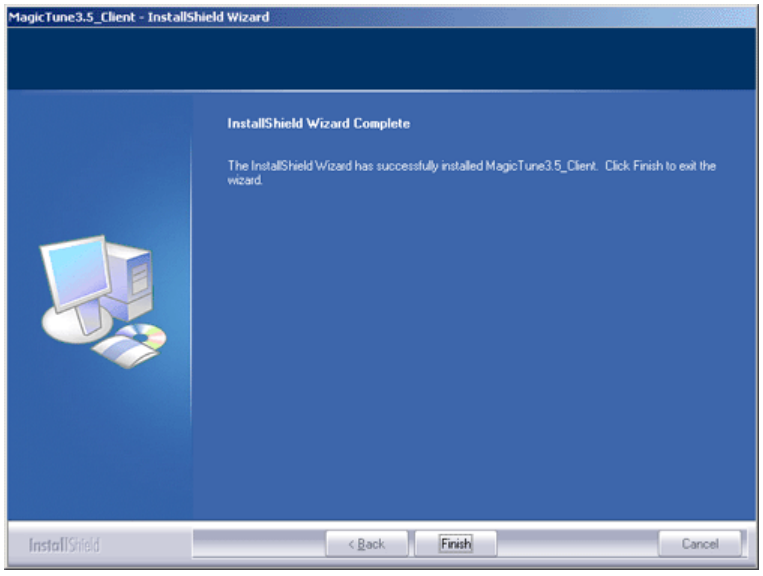
7. Click "Install."


MagicTune3.5_Client - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

8. The "Installationation Status" window appears.



9. Click "Finish."



10. When the installation is complete, the MagicTune executable icon appears on your desktop.

Double-click the icon to start the program.

Magictune execution icon may not appear depending on specification of computer system or monitor. If that happens, press F5 Key.

Installationation Problems

The installation of MagicTune™ can be affected by such factors as the video card, motherboard and the network environment.
See "Troubleshooting" if you have trouble during installation.

System Requirements

OS

- Windows 98 SE
- Windows Me
- Windows 2000
- Windows XP Home Edition
- Windows XP Professional

Hardware

- 32MB Memory above
- 25MB Hard disk space above

* For more information, visit the MagicTune website.

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MagicTune allows for quick accurate tuning of the display with the ability to easily save and use monitor configurations that are best suited for you.

- **OSD mode may appear inconsistent with the explanation in guidance book depending on specification of each monitor.**
- **When Pivot is functioning, part of Magictune Program may not operate normally.**
- **MagicTune control mode will be different according to monitor models.**

OSD Mode

The OSD mode makes the adjustment of settings on all monitors easy. When selected , each tab on top of the control window displays the general descriptions of the sub-menu items for adjustment.
When selected, each tab displays a list of menus. For quick adjustment of the monitor settings, the OSD mode allows easy and convenient access to all tabs and sub-menu items.

Button Tab Definition

OK	Applies any changes made and exits MagicTune.
Reset	Restores the display settings to the factory settings.
Cancel	Exits MagicTune without applying the changes made. If you have not made any changes in the control window, clicking "Cancel" does not cause any actions.

Picture Tab Definition

Allows the user to adjust the screen settings to the desired values.

◉ Brightness ○ Contrast ○ Resolution ○ MagicBright	

Brightness	Makes the entire screen brighter or darker. The detailed data of the images in the dark areas can be lost if the brightness is not adjusted to the proper level. Adjust the brightness for best viewing conditions.
Contrast	Adjusts the difference in brightness between the bright and dark areas on screen. Determines the crispness of the images.
Resolution	Lists all display resolutions supported by the program.
MagicBright™	MagicBright™ is a new feature providing the optimum viewing environment depending on the contents of the image you are watching. Currently four different modes are available: Text, Internet, Entertain and Custom. Each mode has its own pre-configured brightness value. You can easily select one of four settings by simply pressing the MagicBright™ control button. 1. Text: For documentations or works involving heavy text. 2. Internet: For working with a mixture of images such as text and graphics. 3. Entertain: For watching motion pictures such as a DVD or VCD. 4. Custom: Although the values are carefully chosen by our engineers, the pre-configured values may not be comfortable to your eyes depending on your taste. If this is the case, adjust the Brightness and Contrast by using the OSD menu.

Color Tab Definition

Adjusts the "warmth" of the monitor background or image color.

◉ Color Tone ○ Color Control ○ Calibration	

Color Tone	The tone of the color can be changed. ● Warm - Normal - Cool ● Custom
Color Control	Adjusts of the monitor image color. You can change the monitor color to your desired color. ● R- G - B
Calibration	The process through which the colors of your choice are optimized and maintained. You will find MagicTune extremely useful if you are one of those who wish to view images with their full details accurately reproduced - including web images and ones produced by a digital camera or scanner.

Image Tab Definition

Adjusts the Fine , Coarse and Position values.

◉ Image Setup ○ Position	

Image Setup	• Fine : Removes noise such as horizontal stripes. If the noise persists even after Fine tuning, repeat it after adjusting the frequency (clock speed). • Coarse : Removes noise such as vertical stripes. Coarse adjustment may move the screen image area. You may relocate it to the center using the Horizontal Control menu. • Auto Setup : Auto adjustment allows the monitor to self-adjust to the incoming video signal. The values of fine, coarse and position are adjusted automatically.
Position	Adjusts the screen location horizontally and vertically.

Option Tab Definition

You can configure MagicTune using the following options.

Loads the Preferences Dialog Box. Preferences in use will have an "V" in the check box. To turn on or off any Preference, position the cursor over the box and click.

Preferences	• Enable task tray menu . - To access the MagicTune menus, click the icon on the [task tray menu]. The menus are not displayed if the [Enable System Tray] is deselected in [Options] ' [Basic Settings]. • Select Language - The language chosen affects only the language of the OSD.
Source Select	Source Select will be shown only in dual monitor. In analog only model source select will not be shown. • Analog • Digital

Support Tab Definition

Shows the Asset ID and the version number of the program, and allows you to use the Help feature.

Help	Visit the MagicTune website or click to open the Help files (User Manual) if you need any help installing or running MagicTune. The User Manual opens within a basic browser window.	
Asset ID	**User Name**	Shows the client monitor's user name.
	User ID	Shows the client monitor's ID.
	Server IP	Enter the IP Address of server PC.
	Department	Enter the department of the client monitor.
	Location	Enter the location of the client monitor.
Version	Displays the version of MagicTune.	

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Color Calibration

1. Color Calibration

MagicTune
Picture
Color
Image
Option
Support
Color Tone
Color Control
Calibration
Launch
Your display should be calibrated optimal performance. We encourage you to use this simple tuning process to greatly enhance your display's image quality.
Pressing the Magic Tune button beings a short series of steps which will allow you to completely tune your display and save the settings for future use.
OK
Cancel

Color Calibration guides you to get optimal color condition for your monitor.

Proceed following 5steps for getting optimal monitor color condition .

1. Control "Brightness control bar" for matching the brightness of control patch and the brightness of background pattern
2. When you detect specific color tone on "Control patch", move the control cursor toward to the direction of the color tone referring to "Color reference Circle".
   => Adjustment is finished properly, you won't detect any color tone on Control patch.
3. When you finish adjustment for step1,Click "Next" button .
4. Repeat 1), 2), 3) procedures for remaining step2 ~ step5.
5. You can easily view the calibration effect through clicking "Preview " button!

How multiple users can use adjusted color values
Definition
When monitor is used by multiple users, color values which are adjusted via Color calibration for each users can be saved and used. Up to 5 users can use the saved color values.

1. How to save adjusted color values:
   Press Next to make it change into Apply and then you can save adjusted color values.
   As many as 5 values can be saved.
2. How to apply the saved color values:
   Press Multi User button on main screen to select and use one of the saved color values.

2. Preview

Press "Preview" button on the Color Calibration.
The above picture will be shown.

1. Press "View Calibrated" button to see the calibration effect which you adjusted.
2. Press "View Uncalibrated" button to see the original image.

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Uninstall

The MagicTune program can be removed only by using the "Add or Remove Programs" option of the Windows Control Panel.

Perform the following steps remove MagicTune.

1. Go to [Task Tray] ' [Start] ' [Settings] and select [Control Panel] in the menu. If the program runs on Windows XP, go to [Control Panel] in the [Start] menu.
2. Click the "Add or Remove Programs" icon in Control Panel.
3. In the "Add or Remove Programs" screen, scroll down to find "MagicTune." Click on it to highlight it.
4. Click the "Change/Remove" button to remove the program.
5. Click "Yes" to begin the uninstall process.
6. Wait until the "Uninstall Complete" dialog box appears.

Visit the MagicTune website for technical support for MagicTune, FAQs (questions and answers) and software upgrades.

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MagicTune™ HELP

Troubleshooting

- MagicTune may not work in case monitor is replaced or driver of graphic card is updated while MagicTune is operating. If so, please restart the system.

Symptom	Check List	Solutions
Check when MagicTune does not function properly.	MagicTune feature is found only on PC (VGA) with Window OS that supports Plug and Play.	* To check whether your PC is available for MagicTune feature, follow the steps below (When Windows is XP); Control Panel -> Performance and Maintenance -> System -> Hardware -> Device Manager -> Monitors -> After deleting Plug and Play monitor, find 'Plug and Play monitor' by searching new Hardware. MagicTune is an additional software for the monitor. Some graphic cards may not support your monitor. When you have a problem with the graphic card, visit our website to check the compatible graphic card list provided. http://www.samsung.com/monitor/magictune
MagicTune™ doesn't work properly.	Have you changed your PC or video graphic card?	Download the latest program. The program can be downloaded http://www.samsung.com/monitor/magictune.

- Visit the MagicTune™ website and download the installation software for MagicTune™ MAC.
- Visit the MagicTune website for technical support for MagicTune, FAQs (questions and answers) and software upgrades.

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MagicRotation Help

Overview

What is MagicRotation?

Traditionally, computer displays allowed the user to view only in landscape mode.
In today's information age, more users need to view documents, web pages, emails, etc. in there day to day life. These types of applications can be better viewed in portrait mode where the entire contents are available on the screen. This greatly improves the user's productivity allowing him the flexibility to switch between landscape and portrait modes.

The MagicRotation Software from Samsung Electronics, Inc. provides the user with a rotation feature (0, 90, 180, 270 orientation) that facilitates the optimum utilization of computer display screen, better viewing and improved user productivity.

Basic Function

MagicRotation will support Windows™ 98 SE, Me, 2000, XP Home, NT 4.0 and XP Professional.

* Windows™ is registered trademark of Microsoft Corporation,Inc.

The specifications are subject to change without notice.
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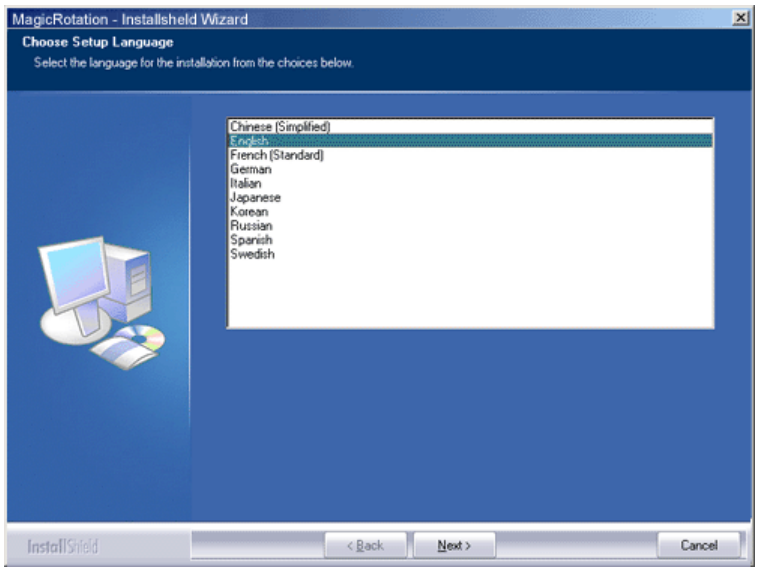
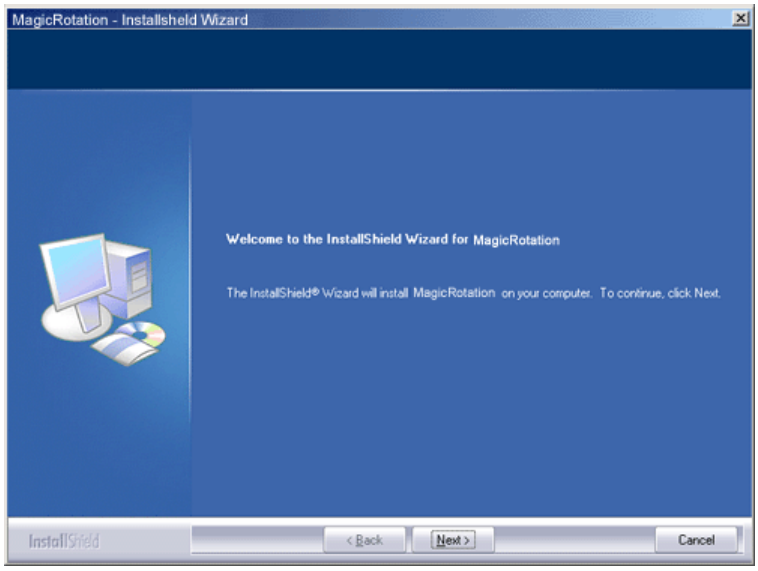
All other product tradmarks mentioned in this document may be registered tradmarks of their respective companies.

Installation

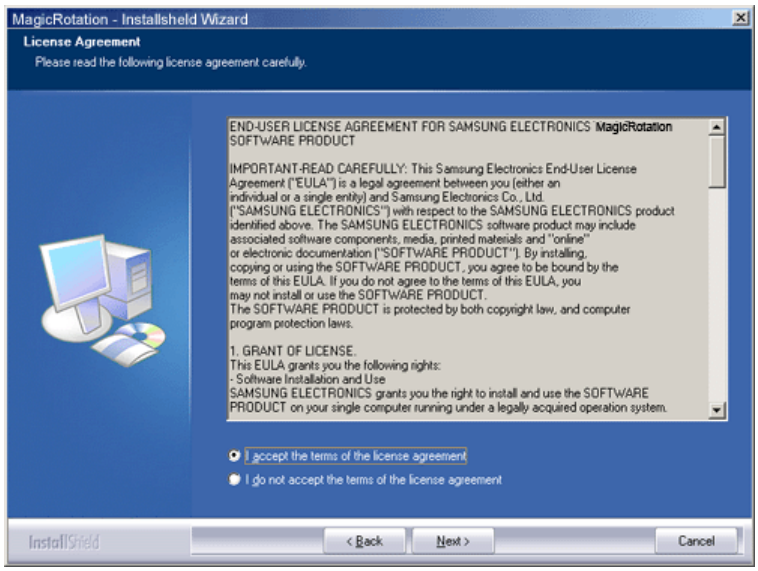
1. Insert the installation CD into the CD-ROM drive.
2. Click the MagicRotation installation file.
3. Select installation Language, Click "Next".



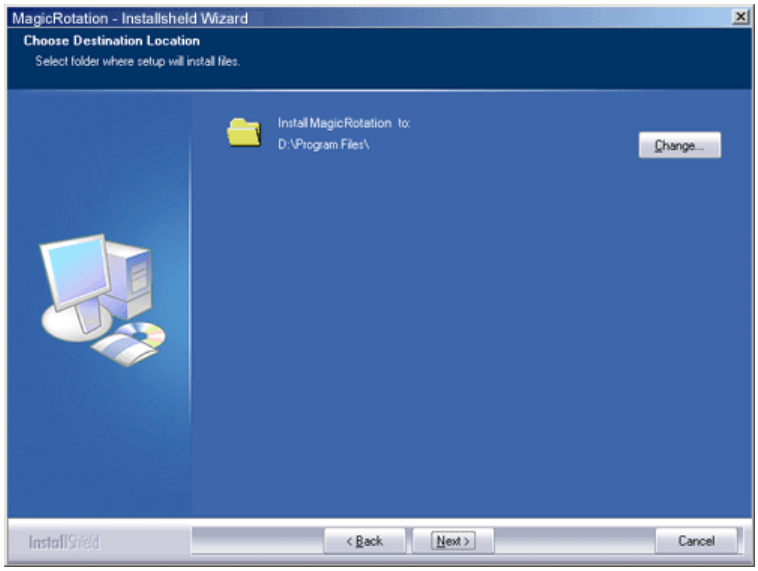
4. When the InstallationShield Wizard window appears, click "Next."


MagicRotation - Installshield Wizard
Welcome to the InstallShield Wizard for MagicRotation
The InstallShield® Wizard will install MagicRotation on your computer. To continue, click Next.
InstallShield
< Back
Next >
Cancel

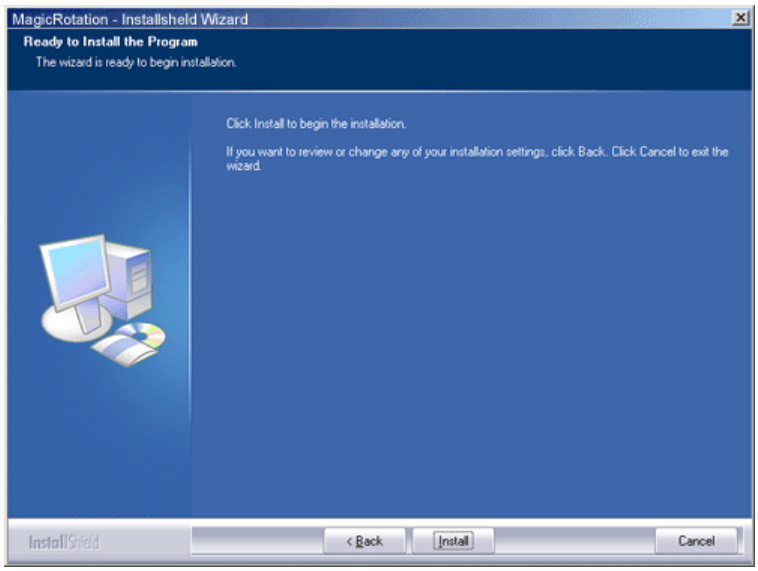
5. Select "I agree to the terms of the license agreement" to accept the terms of use.


MagicRotation - Installshield Wizard
License Agreement
Please read the following license agreement carefully.
END-USER LICENSE AGREEMENT FOR SAMSUNG ELECTRONICS MagicRotation SOFTWARE PRODUCT
IMPORTANT-READ CAREFULLY: This Samsung Electronics End-User License Agreement ("EULA") is a legal agreement between you (either an individual or a single entity) and Samsung Electronics Co., Ltd. ("SAMSUNG ELECTRONICS") with respect to the SAMSUNG ELECTRONICS product identified above. The SAMSUNG ELECTRONICS software product may include associated software components, media, printed materials and "online" or electronic documentation ("SOFTWARE PRODUCT"). By installing, copying or using the SOFTWARE PRODUCT, you agree to be bound by the terms of this EULA. If you do not agree to the terms of this EULA, you may not install or use the SOFTWARE PRODUCT. The SOFTWARE PRODUCT is protected by both copyright law, and computer program protection laws.
1. GRANT OF LICENSE.
This EULA grants you the following rights:
- Software Installation and Use
SAMSUNG ELECTRONICS grants you the right to install and use the SOFTWARE PRODUCT on your single computer running under a legally acquired operation system.
I accept the terms of the license agreement
I do not accept the terms of the license agreement
InstallShield
< Back
Next >
Cancel

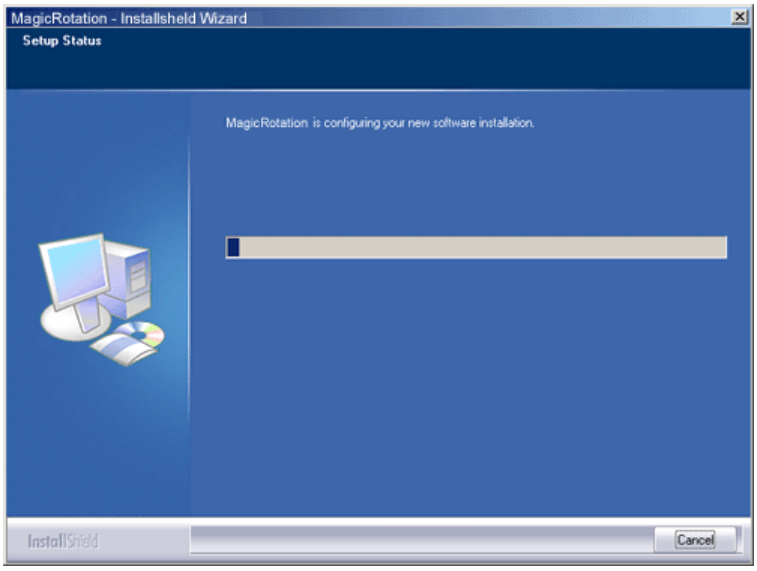
6. Choose a folder to install the MagicRotation program.



7. Click "Install."

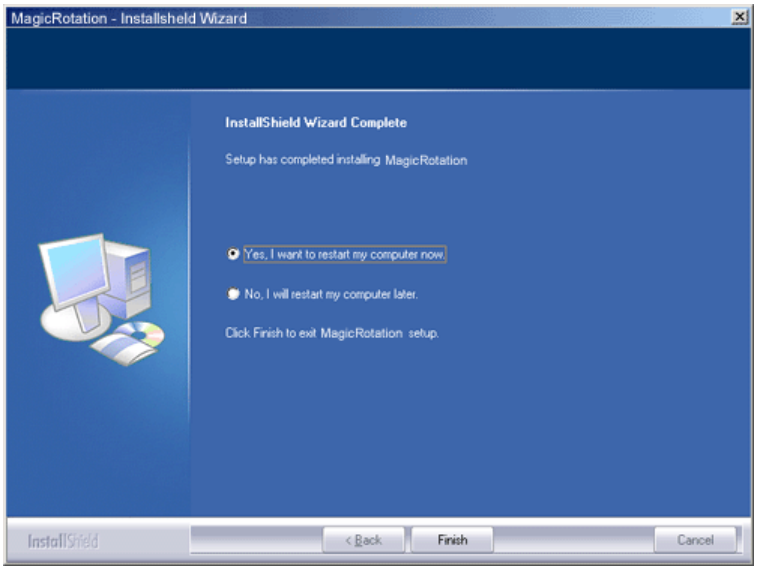

MagicRotation - Installshield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

8. The "Installationation Status" window appears.



9. Click "Finish."

   Have to reboot the system in order for the MagicRotation to work properly.



10. When the installation is complete, the MagicRotation executable icon appears on your desktop.

Installationation Problems

The installation of MagicRotation can be affected by the factors such as video card, motherboard and the network environment.
See "Troubleshooting" if you have trouble during installation.

Limitation

1. The "Display Driver" should be properly loaded for the MagicRotation to work properly.
   The installed "Display Driver" should be the latest driver supplied by the vendor.

2. If some applications like Windows Media Player, Real Player, etc. are not displaying movie files properly in 90, 180 and 270 orientations then do the following :

- Close the application.
- Select the Orientation (90, 180, 270) you want to view the application.
- Relaunch the application.

In most cases this should fix the problem.

3. User Applications using OpenGL and DirectDraw (3D drawing) will not function as per the orientation mode selected (90, 180, 270).
   e.g. 3D games

4. DOS based applications in Full Screen Mode will not function as per the orientation mode selected (90, 180, 270).

5. Dual is not supported in Windows™ 98, ME, NT 4.0.

6. MagicRotation does not provide support for 24 bits per pixel (Bit depth/Color Quality).

7. If you are changing your Graphic Card it is recommended that you uninstall the MagicRotation Software before doing so.

System Requirements

OS

- Windows™ 98 SE
- Windows™ Me
- Windows™ NT 4.0
- Windows™ 2000
- Windows™ XP Home Edition
- Windows™ XP Professional

Hardware

- 128MB Memory above(recommended)
- 25MB Free Hard disk space above

Service Packs

- It is recommended that your System has the latest Service Pack installed.
- For Windows™ NT 4.0, it is recommended to install Internet Explorer 5.0 and above with Active Desktop component.

* For more information, visit the MagicRotation website.

* Windows™ is registered trademark of Microsoft Corporation,Inc.

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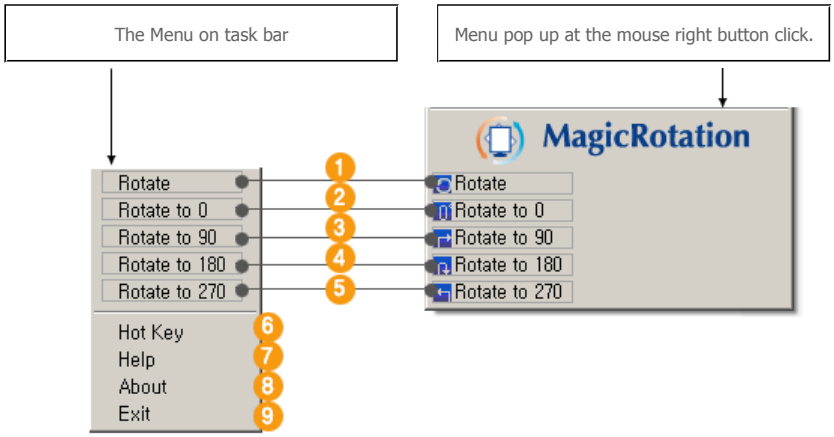
All other product tradmarks mentioned in this document may be registered
tradmarks of their respective companies.

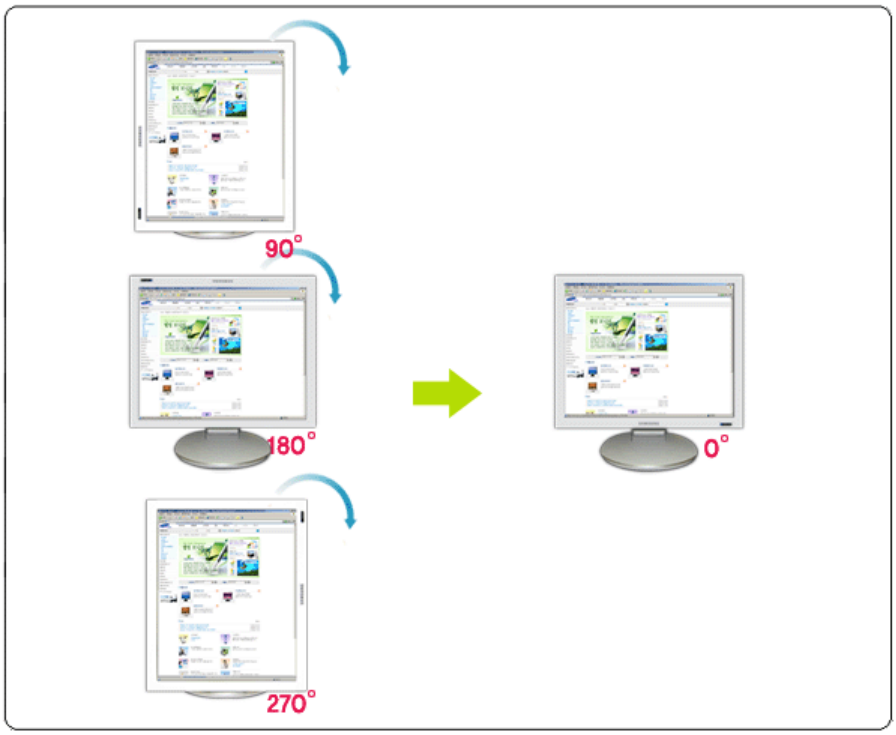
MagicRotation Help

Interface

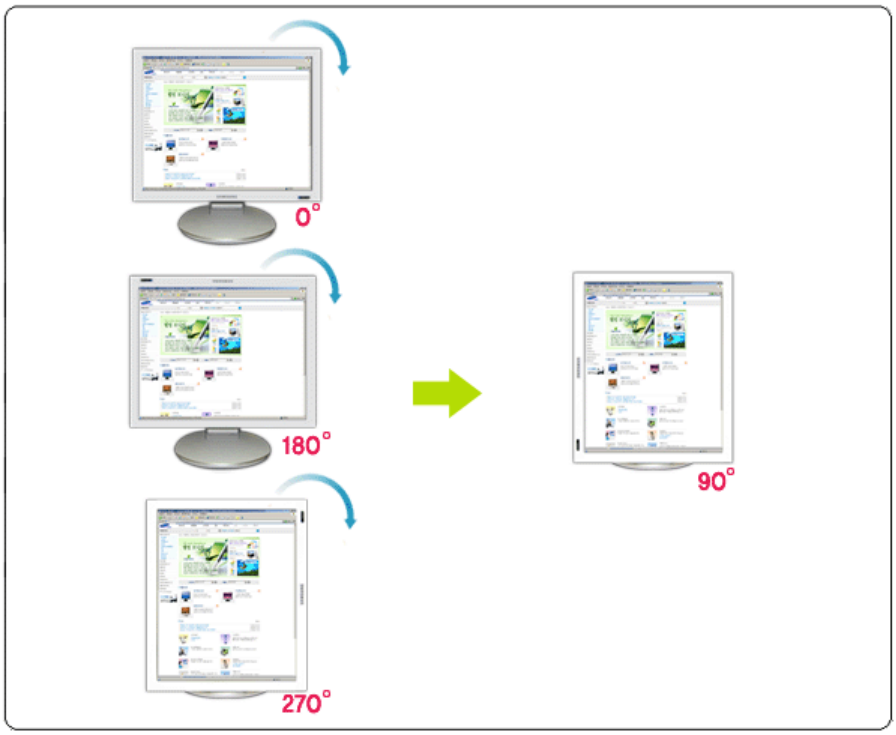


1 **Rotate** : Display will get rotated by the unit of 90 degree

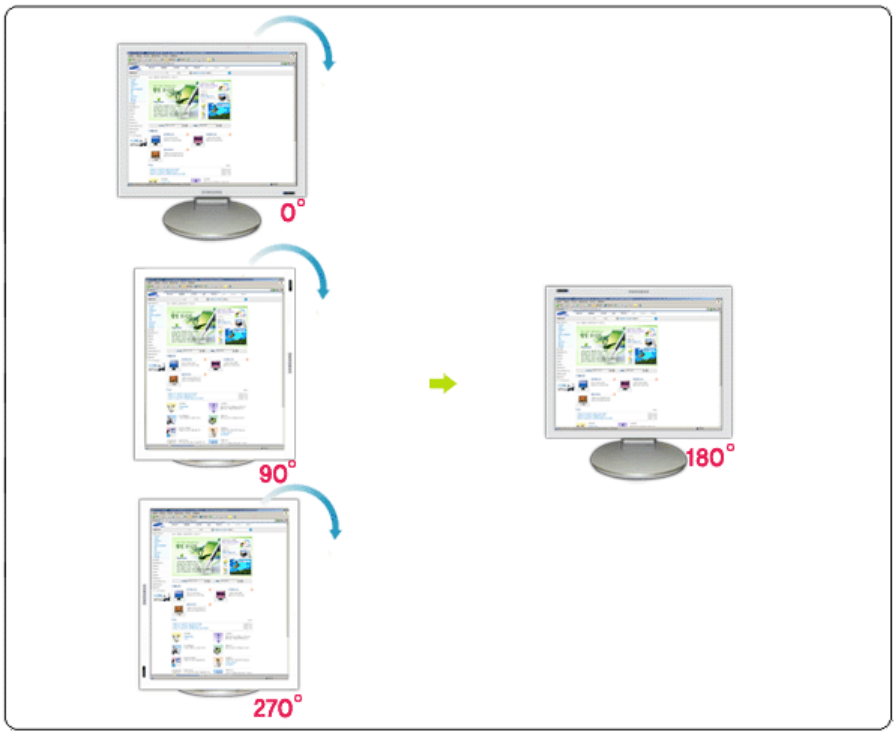
2 **Rotate to 0** : Display will get rotated to 0 degree from the current angle of rotation.



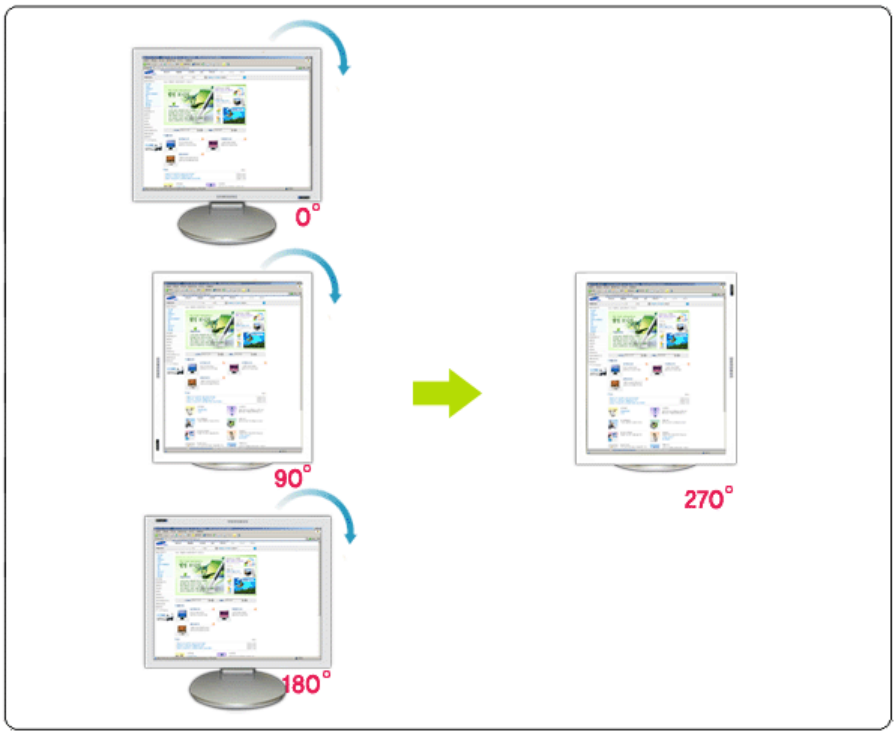
3 **Rotate to 90** : Display will get rotated to 90 degree from the current angle of rotation.



4 **Rotate to 180** : Display will get rotated to 180 degree from the current angle of rotation.



5 **Rotate to 270** : Display will get rotated to 270 degree from the current angle of rotation.



6 **Hot key** : Hot Keys are available by default and can be changed by user.
It can be designated by user directly with keyboard after changing the existing HotKey instead .
User can create the hot key with the combination of Shift, Ctrl, Alt and general keys. In case only general key is pressed, it will be designated in the form of Alt+general key.

7 **Help** : It shows the HELP of MagicRotation program.

8 **About** : It shows the version and copyright of program.

9 **Exit** : It exits from MagicRotation program.

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All other product tradmarks mentioned in this document may be registered tradmarks of their respective companies.

Uninstall

The MagicRotation program can be removed only by using the "Add/Remove Programs" option of the Windows Control Panel.

Perform the following steps to remove MagicRotation.

1. Go to [Task Tray] ' [Start] ' [Settings] and select [Control Panel] in the menu.
   If the program runs on Windows™ XP, go to [Control Panel] in the [Start] menu.
2. Click the "Add/Remove Programs" icon in Control Panel.
3. In the "Add/Remove Programs" screen, scroll down to find "MagicRotation"
   Click on it to highlight it.
4. Click the "Change/Remove" button to remove the program.
5. Click "Yes" to begin the uninstall process.
6. Wait until the "Uninstall Complete" dialog box appears.
7. After unistall restart the system to complete the uninstallation.

Visit the MagicRotation website for technical support for MagicRotation, FAQs (questions and answers) and software upgrades.

* Windows™ is registered trademark of Microsoft Corporation,Inc.

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All other product tradmarks mentioned in this document may be registered
tradmarks of their respective companies.

Troubleshooting

Before You Call Technical Support

- MagicRotation Software works with the installed "Display Driver" supplied by your Graphic Card Vendor to provide screen rotation capabilities. If the installed "Display Driver" is working incorrectly or has bugs in it, then these bugs would still exist even after MagicRotation Software is installed. Any incorrect/random behaviour resulting due to problems in the installed "Display Driver" are not due MagicRotation Software.

  In order to verify if a problem exists in the installed "Display Driver" , you can perform the following diagonostic steps :

  1. Check if the problem is occuring in both 0 orientation (Landscape mode) and 90 orientation (Portarit mode).
  2. Check if the problem occurs with different color depths (8/16/32 bits per pixel) and different resolution modes (800 x 600, 1024 x 768).
  3. Check if the problem occurs without installing MagicRotation Software.

  If the problem is repeating in any/all of the following scenarios then it may be the problem with your installed "Display Driver" :

  In order to correct the problem you need to perform the following steps :

  1. Uninstall MagicRotation Software.
  2. Obtain the latest "Display Driver" from your Graphic Card Vendor.
     The latest "Display Driver" from (ATI, NVIDIA, MATROX, INTEL, etc.) are easily available for download from their respective websites.
  3. Install the latest "Display Driver"
  4. Install MagicRotation Software. In most of the cases this should correct the problem.

- MagicRotation may not work in case monitor is replaced or driver of graphic card is updated while MagicRotation is operating.
  If so, please restart the system.

- Visit the MagicRotation website for technical support for MagicRotation, FAQs (questions and answers) and software upgrades.

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Before calling for service, check the information in this section to see if you can remedy any problems yourself. If you do need assistance, please call the phone number on the Information section or contact your dealer.

Symptom	Check List	Solutions
No images on the screen. I cannot turn on the monitor.	Is the power cord connected properly?	Check the power cord connection and supply.
	Can you see **"Check Signal Cable"** on the screen?	**(When connecting D-Sub cable)** Check the signal cable connection. **(When connecting DVI cabel)** If you still see an (error) message on the screen when the monitor is connected properly, check to see if the monitor status is set to analog. Press source button to have the monitor double-check the input signal source.
	If the power is on, reboot the computer to see the initial screen(the login screen), which can be seen.	If the initial screen (the login screen) appears, boot the computer in the applicable mode (the safe mode for Windows ME/XP/2000) and then change the frequency of the video card. (Refer to the Preset Timing Modes) Note: If the initial screen (the login screen) does not appear, contact the Service Center or your dealer.
	Can you see **"Not Optimum Mode","Recommanded Mode 1280 x 1024 60Hz"** on the screen?	You can see this message when the signal from the video card exceeds the maximum resolution and frequency that the monitor can handle properly. Adjust the maximum resolution and frequency that the monitor can handle properly. If the display exceeds SXGA or 75Hz, a **"Not Optimum Mode","Recommanded Mode 1280 x 1024 60Hz"** message is displayed. If the display exceeds

		85Hz, the display will work properly but the **"Not Optimum Mode","Recommanded Mode 1280 x 1024 60Hz"** message appears for one minute and then disappears. Please change to the recommended mode during this one-minute period. (The message is displayed again if the system is rebooted.)
	There is no image on the screen. Is the power indicator on the monitor blinking at 1 second intervals?	The monitor is in PowerSaver mode. press any key on the keyboard to activate the monitor and restore the image on the screen. If there is still no image, press the '**source**' button. Then press any key on the keyboard again to activate the monitor and restore the image on the screen.
	Is the monitor connected using the DVI cable?	You may get a blank screen if you boot the system before you connect the DVI cable, or disconnect and then reconnect the DVI cable while the system is running as certain types of graphic cards do not send out video signals. Connect the DVI cable and then reboot the system.
The screen shows strange colors or just black and white.	Is the screen displaying only one color as if looking at the screen through a cellophane paper?	Check the signal cable connection. Make sure the video card is fully inserted in it's slot.
	Have the screen colors become strange after running a program or due to a crash between applications?	Reboot the computer.
	Has the video card been set properly?	Set the video card by referring to the video card manual.
The screen suddenly has become unbalanced.	Have you changed the video card or the driver?	Adjust screen image position and size using the OSD.
	Have you adjusted the resolution or frequency to the monitor?	Adjust the resolution and frequency at the video card. (Refer to the Preset Timing Modes).
	The screen can be unbalanced due to the cycle of the video card signals. Readjust position by referring to the OSD.	
The screen is out of focus or OSD cannot be adjusted.	Have you adjusted the resolution or frequency on the monitor?	Adjust the resolution and frequency of the video card. (Refer to the Preset Timing Modes).
LED is blinking but no images on the screen.	Is the frequency properly adjusted when checking the Display Timing on the menu?	Adjust the frequency properly by referring to the video card manual and the Preset Timing Modes. (The maximum frequency per resolution may differ from product to product.)
There are only 16 colors shown on the screen. The screen colors	Have the Windows colors been set properly?	Windows ME/2000/XP: Set the colors properly at the **Control Panel → Display → Settings**.

have changed after changing the video card.	Has the video card been set properly?	Set the video card by referring to the video card manual.
There is a message that reads "Unrecognized monitor, Plug & Play (VESA DDC) monitor found".	Have you installed the monitor driver? See the video card manual to see if the Plug & Play (VESA DDC) function can be supported.	Install the monitor driver according to the Driver Installation Instructions. Install the monitor driver according to the Driver Installation Instructions.
Check when MagicTune does not function properly.	MagicTune feature is found only on PC (VGA) with Window OS that supports Plug and Play.	* To check whether your PC is available for MagicTune feature, follow the steps below (When Windows is XP); Control Panel -> Performance and Maintenance -> System -> Hardware -> Device Manager -> Monitors -> After deleting Plug and Play monitor, find 'Plug and Play monitor' by searching new Hardware. MagicTune is an additional software for the monitor. Some graphic cards may not support your monitor. When you have a problem with the graphic card, visit our website to check the compatible graphic card list provided. http://www.samsung.com/monitor/magictune
MagicTune™ doesn't work properly.	Have you changed your PC or video graphic card?	Download the latest program. The program can be downloaded http://www.samsung.com/monitor/magictune.

Visit our website and download the installation software for MagicTune MAC.

Check the following items if there is trouble with the monitor.

1. Check if the power cord and the video cables are properly connected to the computer.
2. Check if the computer beeps more than 3 times when booting.
   (If it does, request an after-service for the main board of the computer.)
3. If you installed a new video card or if you assembled the PC, check if the installed the adapter (video) driver and the monitor driver.
4. Check if the scanning ratio of the video screen is set at 56Hz ~ 75Hz.
   (Do not exceed 75Hz when using the maximum resolution.)
5. If you have problems in installing the adapter (video) driver, boot the computer in Safe Mode, remove the Display Adapter at the "**Control Panel→System→Device Administrator**" and then reboot the computer to reinstall the adapter (video) driver.

If problems repeatedly occur, contact an authorized service center.

Q & A

Question	Answer
How can I change the frequency?	Frequency can be changed by reconfiguring the video card. Note that video card support can vary, depending on the version of the driver used. (Refer to the computer or the video card

	manual for details.)
How can I adjust the resolution?	Windows ME/XP/2000 : Set the resolution at the Control Panel→Display→Settings. * Contact the video card manufacturer for details.
How can I set the Power Saving function?	Windows ME/XP/2000 : Set the function at BIOS-SETUP of the computer or the screen saver. (Refer to Windows/Computer Manual).
How can I clean the outer case/LCD Panel?	Disconnect the power cord and then clean the monitor with a soft cloth, using either a cleaning solution or plain water. Do not leave any remains of the detergent nor scratch the case. Do not allow any water to go inside the monitor.

Self-Test Feature Check

Self-Test Feature Check | Warning Messages | Environment | Useful Tips

Your monitor provides a self test feature that allows you to check whether your monitor is functioning properly.

Self-Test Feature Check

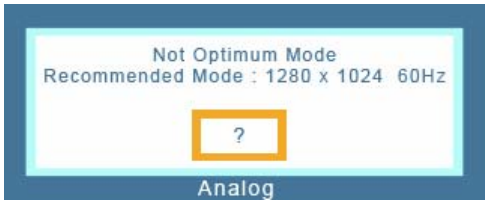
1. Turn off both your computer and the monitor.
2. Unplug the video cable from the back of the computer.
3. Turn on the monitor.
   If the monitor is functioning properly, you will see a box in the illustration below.

   This box appears during normal operation if the video cable becomes disconnected or damaged.

4. Turn off your monitor and reconnect the video cable; then turn on both your computer and the monitor.
   If your monitor screen remains blank after using the previous procedure, check your video controller and computer system; your monitor is functioning properly.

Warning Messages

If there is something wrong with the input signal, a message appears on the screen or the screen goes blank although the power indicator LED is still on. The message may indicate that the monitor is out of scan range or that you need to check the signal cable.



Environment

The location and the position of the monitor may influence the quality and other features of the monitor.

1. if there are any sub woofer speakers near the monitor, unplug and relocate the woofer to another room.
2. Remove all electronic devices such as radios, fans, clocks and telephones that are within 3 feet (one meter) of the monitor.

Useful Tips

- A monitor recreates visual signals received from the computer. Therefore, if there is trouble with the computer or the video card, this can cause the monitor to become blank, have poor coloring, noise, video mode not supported, etc. In this case, first check the source of the problem, and then contact the Service Center or your dealer.

- **Judging the monitor's working condition**
  If there is no image on the screen or a **"Not Optimum Mode","Recommended Mode 1280 x 1024 60Hz"** message comes up, disconnect the cable from the computer while the monitor is still powered on.
  - If there is a message coming up on the screen or if the screen goes white, this means the monitor is in working condition.
  - In this case, check the computer for trouble.

General

General	
Model Name	SAMSUNG 913T
LCD Panel	
Size	19" Diagonal
Display area	376.32mm (H) x 301.056mm (V)
Pixel Pitch	0.294mm (H) x 0.294mm (V)
Type	a-si TFT active matrix
Synchronization	
Horizontal	30 ~ 81 kHz
Vertical	56 ~ 75 Hz
Display Color	
16,194,277 Colors	
Resolution	
Optimum resolution	1280 x 1024@60 Hz
Maximum resolution	1280 x 1024@75 Hz
Input Signal, Terminated	
RGB Analog , DVI(Digital Visual Interface) Compliant Digital RGB 0.7Vp-p Positive at 75 ohms Separate H/V sync, Composite sync, SOG, TTL level positive or negative.	
Maximum Pixel Clock	
140 MHz	
Power Supply	
AC 100 ~ 240 VAC(+/- 10%) , 60/50 Hz ± 3Hz	
Signal Cable	
15pin-to-15pin D-sub cable, detachable DVI-D to DVI-D connector, detachable(option)	
Power Consumption	

Less than 38W

Dimensions (WxDxH)/ Weight (Simple Stand)

416.6 x 60.2 x 349.4 mm / 16.4 x 2.4 x 13.8 inch (Without Stand)
416.6 x 215.2 x 424.6 mm / 16.4 x 8.5 x 16.7 inch(with Basic Stand) / 5.6 kg

Dimensions (WxDxH)/ Weight (Pivot Stand)

416.6 x 60.2 x 349.4 mm / 16.4 x 2.4 x 13.8 inch (Without Stand)
416.6 x 200.0 x 420.6 mm / 16.4 x 7.9 x 16.6 inch(with Basic Stand) / 7.2 kg

VESA Mounting Interface

100mm x 100mm (for use with Specialty(Arm) Mounting hardware.)

Environmental considerations

Operating	Temperature: 50°F ~ 104°F(10°C ~ 40°C) Humidity: 10% ~ 80%, non-condensing
Storage	Temperature: -4°F ~113°F (-20°C ~ 45°C) Humidity: 5% ~ 95%, non-condensing

Plug and Play Capability

This monitor can be installed on any Plug & Play compatible system. Interaction of the monitor and computer systems will provide the best operating conditions and monitor settings. In most cases, monitor installation will proceed automatically, unless the user wishes to select alternate settings.

Note: Design and specifications are subject to change without prior notice.

PowerSaver

This monitor has a built-in power management system called PowerSaver. This system saves energy by switching your monitor into a low-power mode when it has not been used for a certain amount of time. The monitor automatically returns to normal operation when you press a key on the keyboard. For energy conservation, turn your monitor OFF when it is not needed, or when leaving it unattended for long periods. The PowerSaver system operates with a VESA DPMS compliant video card installed in your computer. Use a software utility installed on your computer to set up this feature.

State	Normal Operation	Power saving mode EPA/ENERGY 2000	Power Switch off
Power Indicator	Green	Green, Blinking	Black
Power Consumption	Less than 38W	Less than 1W (Off-mode)	Less than 1W (120Vac)

This monitor is EPA ENERGY STAR® compliant and ENERGY2000 compliant when used with a computer equipped with VESA DPMS functionality.
As an ENERGY STAR® Partner, SAMSUNG has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

Preset Timing Modes

If the signal transferred from the computer is the same as the following Preset Timing Modes, the screen will be adjusted automatically. However, if the signal differs, the screen may go blank while

the power LED is on. Refer to the video card manual and adjust the screen as follows.

Table 1. Preset Timing Modes

Display Mode	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 640 x 350	31.469	70.086	25.175	+/-
IBM, 640 x 480	31.469	59.940	25.175	-/-
IBM, 720 x 400	31.469	70.087	28.322	-/+
MAC, 640 x 480	35.000	66.667	30.240	-/-
MAC, 832 x 624	49.726	74.551	57.284	-/-
MAC, 1152 x 870	68.681	75.062	100.00	-/-
VESA, 640 x 480	37.500	75.000	31.500	-/-
VESA, 640 x 480	37.861	72.809	31.500	-/-
VESA, 800 x 600	35.156	56.250	36.000	-/-
VESA, 800 x 600	37.879	60.317	40.000	+/+
VESA, 800 x 600	46.875	75.000	49.500	+/+
VESA, 800 x 600	48.077	72.188	50.000	+/+
VESA, 1024 x 768	48.363	60.004	65.000	-/-
VESA, 1024 x 768	56.476	70.069	75.000	-/-
VESA, 1024 x 768	60.023	75.029	78.750	+/+
VESA, 1152 x 864	67.500	75.000	108.00	+/+
VESA, 1280 x 1024	63.981	60.020	108.00	+/+
VESA, 1280 x 1024	79.976	75.025	135.00	+/+

Horizontal Frequency

The time to scan one line connecting the right edge to the left edge of the screen horizontally is called Horizontal Cycle and the inverse number of the Horizontal Cycle is called Horizontal Frequency. Unit: kHz

Vertical Frequency

Like a fluorescent lamp, the screen has to repeat the same image many times per second to display an image to the user. The frequency of this repetition is called Vertical Frequency or Refresh Rate. Unit: Hz

Service

The address and phone number of the company can be changed without prior notice.

AUSTRALIA :
Samsung Electronics Australia Pty Ltd.
Customer Response Centre
7 Parkview Drive, Homebush Bay NSW 2127
Tel : 1300 362 603
http://www.samsung.com.au/

BRAZIL :
Samsung Eletronica da Amazonia Ltda.
R. Prof. Manoelito de Ornellas, 303, Terro B
Chacara Sto. Antonio, CEP : 04719-040
Sao Paulo, SP
SAC : 0800 124 421
http://www.samsung.com.br/

CANADA :
Samsung Electronics Canada Inc.
Samsung Customer Care
7037 Financial Drive
Mississauga, Ontario
L5N 6R3
1-800-SAMSUNG (1-800-726-7864)
http://www.samsung.ca/

CHILE :
SONDA S.A.
Teatinos 550, Santiago Centro, Santiago, Chile
Fono: 56-2-5605000 Fax: 56-2-5605353
56-2-800200211
http://www.sonda.com/
http://www.samsung.cl/

COLOMBIA :
Samsung Electronics Colombia
Cra 9 No 99A-02 Of. 106
Bogota, Colombia
Tel.: 9-800-112-112
Fax: (571) 618 - 2068
http://www.samsung-latin.com/
e-mail : soporte@samsung-latin.com

- **ESPAÑA :**
  Samsung Electronics Comercial Iberica, S.A.
  Ciencies, 55-65 (Poligono Pedrosa) 08908
  Hospitalet de Llobregat (Barcelona)
  Tel. : (93) 261 67 00
  Fax. : (93) 261 67 50
  http://samsung.es/

- **FRANCE :**
  SAMSUNG ELECTRONICS FRANCE Service
  Paris Nord 2
  66 rue des Vanesses
  BP 50116 Villepinte
  95950 Roissy CDG Cedex
  Tel : 08 25 08 65 65
  Fax : 01 48 63 06 38
  http://www.samsungservices.com/

- **GERMANY :**
  TELEPLAN Rhein-Main GmbH
  Feldstr. 16
  64331 Weiterstadt
  T. 06151/957-1306
  F. 06151/957-1732
  * EURO 0.12/Min
  http://www.samsung.de/

- **HUNGARY :**
  Samsung Electronics Magyar Rt.
  1039, Budapest, Lehel u. 15-17.
  Tel: 36 1 453 1100
  Fax: 36 1 453 1101
  http://www.samsung.hu/

- **ITALY :**
  Samsung Electronics Italia S.p.a.
  Via C. Donat Cattin, 5
  20063 Cernusco s/Naviglio (MI)
  Servizio Clienti: 199.153.153
  http://www.samsung-italia.com/

- **MÉXICO :**
  SAMSUNG ELECTRONICS MÉXICO. S.A. de C.V.
  Vía Lopez Portillo No. 6, Col. San Fco. Chilpan
  Tultitlán, Estado de México, C.P. 54940
  Tel: 01-55-5747-5100 / 01-800-726-7864
  Fax: 01-55-5747-5202 / 01-800-849-1743
  RFC: SEM950215S98
  http://www.samsung.com.mx/

  IMPORTADO POR: SAMSUNG ELECTRONICS MÉXICO. S.A. de C.V.
  Vía Lopez Portillo No. 6, Col. San Fco. Chilpan
  Tultitlán, Estado de México, C.P. 54940
  Tel: 01-55-5747-5100 / 01-800-726-7864

  EXPORTADO POR: Samsung Electronics CO.,LTD.
  416, Mae tan-3dong, Yeongtong - gu,
  Suwon City, Gyeonggi-do Korea

- **NETHERLANDS/BELGIUM/LUXEMBOURG :**
  Samsung Electronics Benelux B. V.
  Fleminglaan 12 2289 CP Rijiswijk, NEDERLANDS
  Service and informatielijn ;
  Belgium :0800-95214, http://www.samsung.be/
  Netherlands : 0800-2295214, http://www.samsung.nl/

- **PANAMA :**
  Samsung Electronics Latinoamerica(Z.L.) S.A.
  Calle 50 Edificio Plaza Credicorp, Planta Baja
  Panama
  Tel. : (507) 210-1122, 210-1133
  Tel : 800-3278(FAST)
  http://www.samsung-latin.com/

- **PERU :**
  Servicio Integral Samsung
  Av.Argentina 1790 Lima1. Peru
  Tel: 51-1-336-8686
  Fax: 51-1-336-8551
  http://www.samsungperu.com/

- **PORTUGAL :**
  SAMSUNG ELECTRONICA PORTUGUESA S.A.
  Rua Mário Dioniso, Nº2 - 1º Drt. 2795-140 LINDA-A-VELHA
  Tel. 214 148 114/100 Fax. 214 148 133/128
  Free Line 800 220 120
  http://www.samsung.pt/

- **SOUTH AFRICA :**
  Samsung Electronics,5 Libertas Road, Somerset Office Park,
  Bryanston Ext 16. Po Box 70006, Bryanston,2021, South Africa
  Tel : 0027-11-549-1621
  Fax : 0027-11-549-1629
  http://www.samsung.co.za/

- **SWEDEN/DENMARK/NORWAY/FINLAND :**
  Samsung Electronics AB
  Box 713
  S-194 27 UPPLANDS VÄSBY
  SVERIGE
  Besöksadress : Johanneslundsvägen 4
  Samsung support Sverige: 020-46 46 46
  Samsung support Danmark : 8088-4646
  Samsung support Norge: 8001-1800
  Samsung support Finland: 0800-118001
  Tel +46 8 590 966 00
  Fax +46 8 590 966 50
  http://www.samsung.se/

- **THAILAND :**
  HAI SAMSUNG SERVICE CENTER
  MPA COMPLEX BUILDING,1st-2nd Floor
  175 SOI SUEKSA VIDHAYA SATHON SOI 12
  SILOM ROAD ,SILOM,BANGRAK
  BANGKOK 10500
  TEL : 0-2635-2567
  FAX : 0-2635-2556

- **UKRAINE :**
  SAMSUNG ELECTRONICS REPRESENTATIVE OFFICE IN UKRAINE
  4 Glybochitska str.
  Kiev, Ukraine
  Tel. 8-044-4906878
  Fax 8-044-4906887
  Toll-free 8-800-502-0000
  http://www.samsung.com.ua/

- **United Kingdom :**
  Samsung Electronics (UK) Ltd.
  Samsung House, 225 Hook Rise South

Surbiton, Surrey KT6 7LD
Tel. : (0208) 391 0168
Fax. : (0208) 397 9949
< European Service Center & National Service >
Stafford Park 12 Telford, Shropshire, TF3 3BJ
Tel. : (0870) 242 0303
Fax. : (01952) 292 033
http://samsungservice.co.uk/

- **U.S.A :**
  Samsung Electronics America
  Service Division
  400 Valley Road, Suite 201
  Mount Arlington, NJ 07856
  1-800-SAMSUNG (1-800-726-7864)
  http://samsung.com/monitor/

Terms

- **Dot Pitch**
  The image on a monitor is composed of red, green and blue dots. The closer the dots, the higher the resolution. The distance between two dots of the same color is called the 'Dot Pitch'. Unit: mm

- **Vertical Frequency**
  The screen must be redrawn several times per second in order to create and display an image for the user. The frequency of this repetition per second is called Vertical Frequency or Refresh Rate. Unit: Hz

  Example: If the same light repeats itself 60 times per second, this is regarded as 60 Hz.

- **Horizontal Frequency**
  The time to scan one line connecting the right edge to the left edge of the screen horizontally is called Horizontal Cycle. The inverse number of the Horizontal Cycle is called Horizontal Frequency. Unit: kHz

- **Interlace and Non-Interlace Methods**
  Showing the horizontal lines of the screen from the top to the bottom in order is called the Non-Interlace method while showing odd lines and then even lines in turn is called the Interlace method. The Non-Interlace method is used for the majority of monitors to ensure a clear image. The Interlace method is the same as that used in TVs.

- **Plug & Play**
  This is a function that provides the best quality screen for the user by allowing the computer and the monitor to exchange information automatically. This monitor follows the international standard VESA DDC for the Plug & Play function.

- **Resolution**
  The number of horizontal and vertical dots used to compose the screen image is called 'resolution'. This number shows the accuracy of the display. High resolution is good for performing multiple tasks as more image information can be shown on the screen.

  Example: If the resolution is 1280 x 1024 , this means the screen is composed of 1280 horizontal dots (horizontal resolution) and 1024 vertical lines (vertical resolution).

For Better Display

1. Adjust computer resolution and screen injection rate (refresh rate) oncomputer as described below to enjoy the best quality of picture. You can have an uneven quality of picture in the screen if the best quality of picture is not provided in TFT-LCD.
   - Resolution: 1280 x 1024
   - Vertical frequency (refresh rate): 60 Hz
2. When you clean the monitor and the panel outside, please apply the recommended small amount of cleaner by using soft and dry cloth and polish it. Let LCD area not to be forced but to be scrubbed out softly.
   If excessive force is applied, you can have a stain on it.
3. If you are not satisfied with the quality of picture, you can get better quality of picture by executing "auto adjustment function" in display screen that is appeared as window termination button is pressed.
   If there's still noise after automatic adjustment, use FINE/COARSE adjustment function.
4. If you view a fixed screen for an extended period of time, residual image or blurriness may appear.
   Change the mode to energy save or set a screensaver to moving picture when you need to be away from the monitor for an extended period of time.

Authority

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FCC Information | IC Compliance Notice | MPR II Compliance
European Notice (Europe only) | PCT Notice | VCCI |
TCO'95-Ecological requirements for personal computers (TCO'95 applied model only)
TCO'99-Ecological requirements for personal computers (TCO'99 applied model only)
TCO'03-Ecological requirements for personal computers (TCO'03 applied model only)
TCO'03 Recycling Information (TCO'03 applied model only)
Medical Requirement
Mercury Statement (LCD Monitor, LCD TV, DLP Projection TV, Projector for USA only)

FCC Information

User Instructions
The Federal Communications Commission Radio Frequency Interference Statement includes the following warning:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television receptions, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

User Information
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. If necessary, consult your dealer or an experienced radio/television technician for additional suggestions. You may find the booklet called How to Identify and Resolve Radio/TV Interference Problems helpful. This booklet was prepared by the Federal Communications Commission. It is available from the U.S. Government Printing Office, Washington, DC 20402, Stock Number 004-000-00345-4.

The party responsible for product compliance:
SAMSUNG ELECTRONICS CO., LTD
America QA Lab of Samsung
3351 Michelson Drive,
Suite #290, Irvine, CA92612 USA
Tel) 949-975-7310
Fax) 949-922-8301

Warning
User must use shielded signal interface cables to maintain FCC compliance for the product.

Provided with this monitor is a detachable power supply cord with IEC320 style terminations. It may be suitable for connection to any UL Listed personal computer with similar configuration. Before making the connection, make sure the voltage rating of the computer convenience outlet is the same as the monitor and that the ampere rating of the computer convenience outlet is equal to or exceeds the monitor voltage rating.
For 120 Volt applications, use only UL Listed detachable power cord with NEMA configuration 5-15P type (parallel blades) plug cap. For 240 Volt applications use only UL Listed Detachable power supply cord with NEMA configuration 6-15P type (tandem blades) plug cap.

IC Compliance Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations of ICES-003.

Cet appareil Numérique de classe B respecte toutes les exigences du Règlemont NMB-03 sur les équipements produisant des interférences au Canada.

MPR II Compliance

This monitor complies with SWEDAC(MPR II) recommendations for reduced electric and magnetic fields.

European Notice(Europe Only)

Products with the CE marking comply with the EMC Directive(89/336/EEC), (92/31/EEC), (93/68/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community. Compliance with these directives implies conformity to the following European Norms:

- EN55022:1998+A1:2000 - Radio Frequency Interference
- EN55024:1998 - Electromagnetic Immunity
- EN61000-3-2:1995+A1/A2:1998 - Power Line Harmonics
- EN61000-3-3:1995 - Voltage Fluctuations

PCT Notice

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VCCI

This is a Class B product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

TCO'95-Ecological requirements for personal computers (TCO'95 applied model only)

AB general requirements
AB2 Written Eco-document acompanying the products
Congratulations! You have just purchased a TCO'95 approved and labelled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and to the further development of environmentally-adapted electronic products.

Why do we have environmentally-labelled monitors?
In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment.The main problem as far as monitors and other electronic equipment are concerned is that environmentally harmful substances are used both in the products and during their manufacture. Since it has not been possible so far for the majority of electronic equipment to be recycled in a satisfactory way, most of these potentially damaging substances sooner or later enter Nature.

There are also other characteristics of a monitor, such as energy consumption levels, that are important from both the working and natural environment viewpoints. Since all types of conventional electricity generation have a negative effect on the environment (acidic and

climate-influencing emissions, radioactive waste, etc.) it is vital to conserve energy. Electronic equipment in offices consumes an enormous amount of energy, since it is often routinely left running continuously.

What does labelling involve?
This product meets the requirements for the TCO'95 scheme, which provides for international environmental labelling of monitors. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Naturskyddsforeningen (The Swedish Society for Nature Conservation) and NUTEK (The National Board for Industrial and Technical Development in Sweden).

The requirements cover a wide range of issues: environment, ergonomics, usability, emission of electrical and magnetic fields, energy consumption and electrical and fire safety.

The environmental demands concern among other things restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons), and chlorinated solvents. The product must be prepared for recycling and the manufacturer is obliged to have an environmental plan, which must be adhered to in each country where the company conducts its operations policy. The energy requirements include a demand that the monitor after a certain period of inactivity shall reduce its power consumption to a lower level, in one or more stages. The length of time to reactivate the monitor shall be reasonable for the user.

Labelled products must meet strict environmental demands, for example in respect of the reduction of electric and magnetic fields, along with physical and visual ergonomics and good usability.

TCO Development Unit 1996-11-29
On the page this folder you will find a brief summary of the environmental requirements met by this product.
The complere environmental criteria document may be ordered from:
TCO Development Unit
S-11494 Stockholm
Sweden
Fax: +46 8 782 92 07
E-mail (Internet): development@tco.se
Current information regarding TCO'95-approved and labelled products may also be obtained via the Internet, using the address:
http://www.tco-info.com/
TCO'95 is a co-operative project between(3 logos)

Environmental Requirements
Brominated flame retardants are present in printed circuit boards, cables, wires, casings and housings. In turn, they delay the spread of fire. Up to thirty percent of the plastic in a computer casing can consist of flame retardant substances. These are related to another group of environmental toxins, PCBs, which are suspected to give rise to similar harm, including reproductive damage in fish eating birds and mammals, due to the bioaccumulative processes. Flame retardants have been found in human blood and researchers fear that disturbances in foetus development may occur.
- TCO'95 demand requires that plastic components weighing more than 25 grams must not contain organically bound chlorine and bromine.

Lead
Lead can be found in picture tubes, display screens, solders and capacitors. Lead damages the nervous system and in higher doses, causes lead poisoning.

- TCO'95 requirement Permits the inclusion of lead since no replacement has yet been developed.

Cadmium
Cadmium is present in rechargeable batteries and in the colour generating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses.

- TCO'95 requirement states that batteries may not contain more than 25 ppm (parts per million) of cadmium. The colour-generating layers of display screens must not contain any cadmium.

Mercury
Mercury is sometimes found in batteries, relays and switches. Mercury damages the nervous system and is toxic in high doses.

- TCO'95 requirement states that batteries may not contain more than 25 ppm (parts per million) of mercury. It also demands that no mercury is present in any of the electrical or electronics components concerned with the display unit.

CFCs (freons)

CFCs (freons) are sometimes used for washing printed circuit boards and in the manufacturing of expanded foam for packaging. CFCs break down ozone and thereby damage the ozone layer in the stratosphere, causing increased reception on Earth of ultraviolet light with consequent increased risks of skin cancer (malignant melanoma).

- The relevant TCO'95 requirement: Neither CFCs nor HCFCs may be used during the manufacturing of the product or its packaging.

TCO'99-Ecological requirements for personal computers (TCO'99 applied model only)

Congratulations!
You have just purchased a TCO'99 approved and labelled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and also to the further development of environmentally adapted electronics products.

This product meets the requirements for the TCO'99 scheme which provides for an international environmental and quality labelling labelling of personal computers. The labelling scheme was developed as a joint effort by the TCO(The Swedish Confederation of Professional Employees), Svenska Naturskyddsforeningen(The Swedish Society for Nature Conservation), Statens Energimyndighet(The Swedish National Energy Administration) and SEMKO AB.

The requirements cover a wide range of issuse: environment, ergonomics, usability, reduction of electric and magnetic fields, energy consumption and electrical safety.

Why do we have environmentally labelled computers?
In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem, as far as computers and other electronics equipment are concerned, is that environmentally harmful substances are used both in the products and during their manufacture. Since it is not so far possible to satisfactorily recycle the majority of electronics equipment, most of these potentially damaging substances sooner or later enter nature.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work (internal) and natural (external) environments. Since all methods of electricity generation have a negative effect on the environment (e.g. acidic and climate-influencing emissions, radioactive waste), it is vital to save energy. Electronics equipment in offices is often left running continuously and thereby consumes a lot of energy.

What does labelling involve?
The environmental demands has been developed by Svenska Naturskyddsforeningen (The Swedish Society for Nature Conservation). These demands impose restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs(freons) and chlorinated solvents, among other things. The product must be prepared for recycling and the manufacturer is obliged to have an environmental policy which must be adhered to in each country where the company implements its operational policy.

The energy requirements include a demand that the computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the computer shall be reasonable for the user.

Below you will find a brief summary of the environmental requirements met by this product. The complete environmental criteria document may be ordered from:

TCO Development
SE-114 94 Stockholm, Sweden
Fax: +46 8 782 92 07
Email (Internet): development@tco.se

Current information regarding TCO'99 approved and labelled products may also be obtained via the Internet, using the address: http://www.tco-info.com/

Environmental requirements

Flame retardants
Flame retardants are present in printed circuit boards, cables, wires, casings and housings. Their purpose is to prevent, or at least to delay the spread of fire. Up to 30% of the plastic in a computer casing can consist of flame retardant substances. Most flame retardants contain bromine or chloride, and those flame retardants are chemically related to another group of environmental toxins, PCBs. Both the flame retardants containing bromine or chloride and the PCBs are suspected of giving rise to severe health effects, including reproductive damage in fish-eating birds and mammals, due to the bio-accumulative* processes. Flame retardants have been found in human blood and researchers fear that disturbances in foetus development may occur.

The relevant TCO'99 demand requires that plastic components weighing more than 25 grams must not contain flame retardants with organically bound bromine or chlorine. Flame retardants are allowed in the printed circuit boards since no substitutes are available.

Cadmium**
Cadmium is present in rechargeable batteries and in the colour-generating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses. The relevant TCO'99 requirement states that batteries, the colour-generating layers of display screens and the electrical or electronics components must not contain any cadmium.

Mercury**
Mercury is sometimes found in batteries, relays and switches. It damages the nervous system and is toxic in high doses. The relevant TCO'99 requirement states that batteries may not contain any mercury. It also demands that mercury is not present in any of the electrical or electronics components associated with the labelled unit. There is however one exception. Mercury is, for the time being, permitted in the back light system of flat panel monitors as today there is no commercially available alternative. TCO aims on removing this exception when a Mercury free alternative is available.

CFCs (freons)
The relevant TCO'99 requirement states that neither CFCs nor HCFCs may be used during the manufacture and assembly of the product. CFCs (freons) are sometimes used for washing printed circuit boards. CFCs break down ozone and thereby damage the ozone layer in the stratosphere, causing increased reception on earth of ultraviolet light with e.g. increased risks of skin cancer (malignant melanoma) as a consequence.

Lead**
Lead can be found in picture tubes, display screens, solders and capacitors. Lead damages the nervous system and in higher doses, causes lead poisoning. The relevant TCO'99 requirement permits the inclusion of lead since no replacement has yet been developed.

TCO'03-Ecological requirements for personal computers (TCO'03 applied model only)

Congratulations!
The display you have just purchased carries the TCO'03 Displays label. This means that your display is designed, manufactured and tested according to some of the strictest quality and environmental requirements in the world. This makes for a high performance product, designed with the user in focus that also minimizes the impact on our natural environment.

Some of the features of the TCO'03 Display requirements:

Ergonomics
Good visual ergonomics and image quality in order to improve the working environment for the user and to reduce sight and strain problems. Important parameters are luminance, contrast, resolution, reflectance, colour rendition and image stability.

Energy
- Energy-saving mode after a certain time ?beneficial both for the user and the environment
- Electrical safety

Emissions

- Electromagnetic fields
- Noise emissions

Ecology

- The product must be prepared for recycling and the manufacturer must have a certified environmental management system such as EMAS or ISO 14 000
- Restrictions on
  o chlorinated and brominated flame retardants and polymers
  o heavy metals such as cadmium, mercury and lead.

The requirements included in this label have been developed by TCO Development in cooperation with scientists, experts, users as well as manufacturers all over the world. Since the end of the 1980s TCO has been involved in influencing the development of IT equipment in a more user-friendly direction. Our labelling system started with displays in 1992 and is now requested by users and IT-manufacturers all over the world.

For more information, Please visit
www.tcodevelopment.com

TCO'03 Recycling Information (TCO'03 applied model only)

For recycling information for TCO'03 certified monitors, for the residents in the following countries, please contact the company corresponding to your region of residence. For those who reside in other countries, please contact a nearest local Samsung dealer for recycling information for the products to be treated in environmentally acceptable way.

	[U.S.A. Residents Only]	[European Residents Only]		
	U.S.A.	SWEDEN	NORWAY	GERMANY
COMPANY	Solid Waste Transfer & Recycling Inc	ELKRETSEN	Elektronikkretur AS	vfw AG
ADDRESS	442 Frelinghuysen Ave Newark, NJ 07114	ELKRETSEN Box 1357, 111 83 Stockholm Barnhusgatan 3, 4 tr.	6454 Etterstad 0602 Oslo Fyrstikkalln 3B	Max Plank Strasse 42 50858 Collogne Germany
TELEPHONE	973-565-0181	08-545 212 90	23 06 07 40	49 0 2234 9587 - 0
FAX	Fax: 973-565-9485	08-545 212 99	23 06 07 41	
E-MAIL	none	info@el-kretsen.se	adm@elektronikkretur.no	vfw.info@vfw-ag.de
HOME PAGE	http://www.bcua.org/Solid Waste_Disposal.htm	http://www.el-kretsen.se/	http://www.elretur.no/	

Medical Requirement

Classifications:
In accordance with UL 2601-1/IEC 60601-1, the product is cssified as Continuous duty Class I equipment, which is not protected against ingress of liquids. The product is not suitable for use in the presence of a flammable anaesthetic mixture with air or with oxygen or nitrous oxide.

EMC
This equipment has been tested and found to comply with the limits for medical devices to the IEC 601-1-2:1994. These limits are designed to provide reasonable protection against harmful interference in a typical medical installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may

cause harmful interference to other devices in the vicinity. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to other devices, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving device.
- Increase the separation between the equipment.
- Connect the equipment into an outlet on a circuit different from that to which the other device(s) are connected.
- Consult the manufacturer or field service technician for help.

Video In / RS 232 / Video Out
Accessories equipment connected to the analog and digital interfaces must be certified to the respective IEC standards (i.e. IEC 950 for data processing equipment and IEC 601-1 for medical equipment.) Furthermore all configurations shall comply with the system standard IEC 601-1-1. Everybody who connects additional equipment to the signal input part or signal output part configures a medical system, and is therefore, responsible that the system complies with the requirements of the system standard IEC 601-1-1. If in doubt, consult the technical services department or your local representative.

Transport and Storage Limitations:
Temperature Range of -40˚C to +70˚C
Relative Humidity of 10 -95%, non-condensing

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* Bio-accumulative is defined as substances which accumulate within living organisms.
** Lead, Cadmium and Mercury are heavy metals which are Bio-accumulative.

Mercury Statement (LCD Monitor, LCD TV, DLP Projection TV, Projector for USA only)

Hg LAMP(S) INSIDE THIS PRODUCT CONTAIN MERCURY AND MUST BE RECYCLED OR DISPOSED OF ACCORDING TO LOCAL, STATE OR FEDERAL LAWS
For details see lamprecycle.org, eiae.org, or call 1-800-Samsung

PRODUCT INFORMATION (Image Retention Free)

LCD Monitors and TVs may have image retention when switching from one image to another especially after displaying a stationary image for a long time.
This guide is to demonstrate correct usage of LCD products in order to protect them from Image retention.

- **What is Image retention ?**
  During normal operation of a LCD panel, pixel image retention doesn't occur. However, if the same image is displayed for a long time, a slight difference in electric charge accumulates between the two electrodes which encase the liquid crystal. This may cause the liquid crystal to build up in a certain areas of the display. Thus, the previous image is retained when switching to a new video image. All display products, including LCD,are subject to image retention. This is not a product defect.

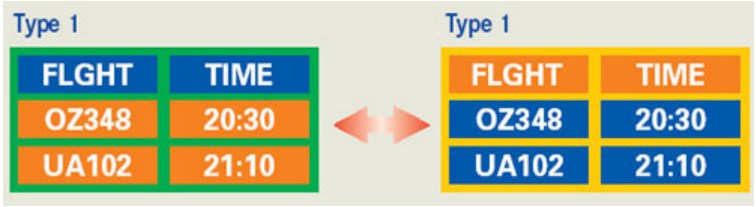
  Please follow the suggestions below to protect your LCD from image retention

- **Power Off, Screen Saver, or Power Save Mode**
  Ex)
  - Turn the power off when using a stationary pattern.
    - Turn the power off for 4 hours after 24 hours in use
    - Turn the power off for 2 hours after 12 hours in use
  - Use a Screen saver if possible
    - Screen saver in one color or a moving image is recommended.
  - Set the Monitor to power off with the PC Display Properties Power Scheme.

- **Suggestions for specific applications**
  Ex) Airports, Transit Stations, Stock Markets, Banks, and Controlling Systems
  We recommend that you follow set up of your display system program as below:

- **Display Information together with Logo or Moving image cycle.**
  Ex) Cycle : Display Information for 1 hour followed by a
  Display Logo or moving image for 1 minute.

- **Change the Color Information periodically (Use 2 different colors).**
  Ex) Rotate the Color Information with 2 colors every 30 minutes.



Avoid using a combination of characters and background color with large difference in luminance.
Avoid using Grey colors, which can cause Image retention easily.

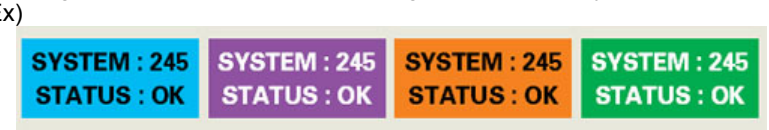
- Avoid: Colors with big difference in luminance (Black & White, Grey)

Ex)

- Recommended settings: Bright colors with little difference in luminance

- Change the characters color and background color every 30 minutes

Ex)



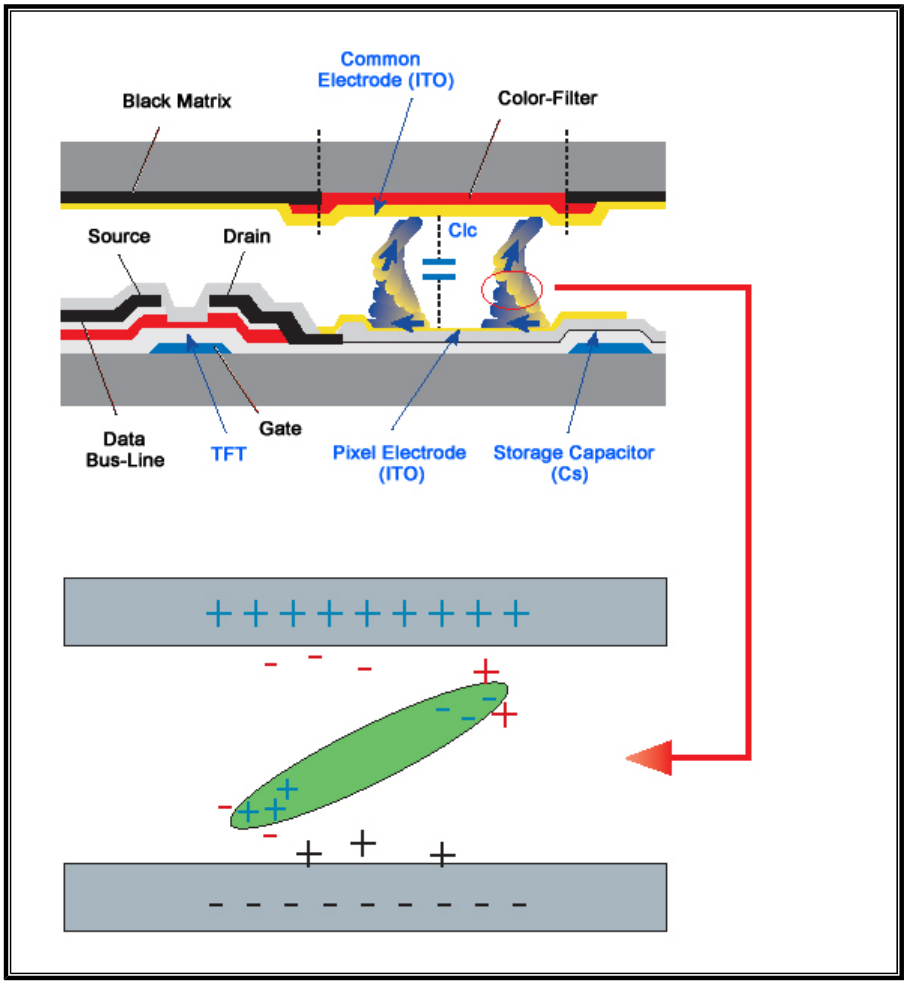
- Every 30 minutes, change the characters with movement.

Ex)

- **The best way to protect your monitor from Image retention is to set your PC or System to operate a Screen Saver program when you are not using it.**

  Image retention may not occur when a LCD panel is operated under normal conditions.

  Normal conditions are defined as continuously changing video patterns. When the LCD panel is operated for a long time with a fixed pattern (-over 12 hours-), there may be slight difference in voltage between electrodes that work the liquid crystal (LC) in a pixel. The voltage difference between electrodes increases with time, forcing the liquid crystal to lean. When this occurs, the previous image may be seen when the pattern is changed.
  To prevent this, the accumulated voltage difference must be decreased.



- Our LCD Monitor satisfies ISO13406-2 Pixel fault Class II

Correct Disposal of This Product
(Waste Electrical & Electronic Equipment) - Europe only

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.